Undergraduate Psychology Research Methods Journal

Volume 1 | Issue 8 Article 15

11-2008

Fall 2008, Full Issue

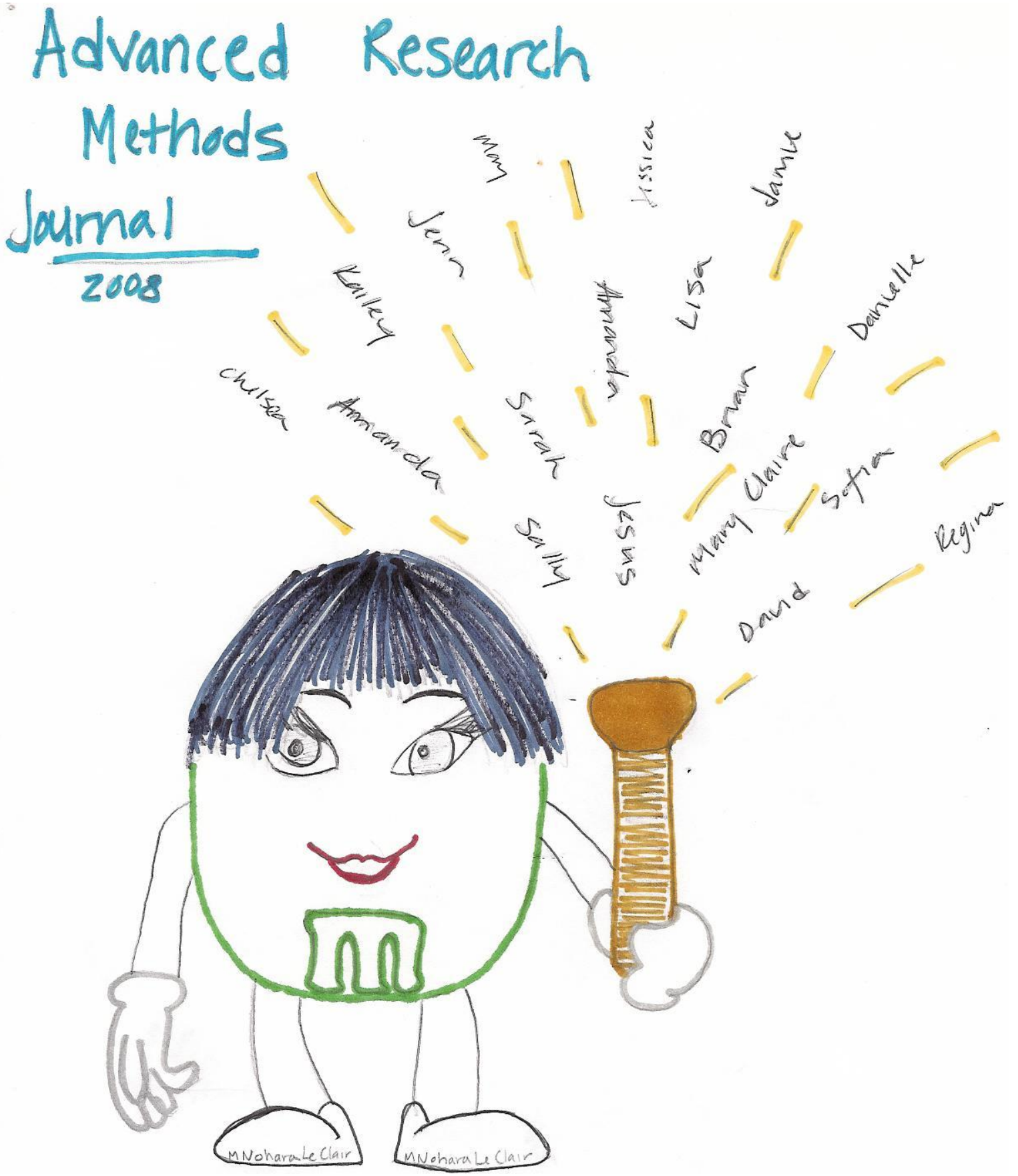

Advanced Research Methods Journal 2008
Mary
Jessica
Jamie
Jenn
Kelley
Lisa
Amanda
Danielle
Chelsea
Sarah
Brian
Mary Claire
Sofia
Sally
Jesus
David
Regina
MNoharaLeClair
MNoharaLeClair

Table of Contents

Prologue

The PSY404 students of Fall 2008 took on some of the most ambitious projects I have seen thus far. Every one of these projects bears out the passion the students have toward their selected topics. The hard work the students put into their project is only overshadowed by the amount of passion they have about the subject matter they were investigating.

I also want to mention that these were some of the most patient students I have ever had – the publication of this journal took two years, the longest it has ever taken, and the longest it shall ever be. The main cause of the delay is due to the loss of the precious papers due to the sudden death of my second portable hard drive as we were editing this journal. We also hit upon a transitional period with the course tutor, who is normally tasked to help edit this journal.

I am happy to say that in the end, we succeeded in recovering all of the papers and that this long awaited journal is finally ready to disseminate. The publication of this journal would not have been possible without our journal cover design, which was created by Lisa Clark, and help received from our present day tutor (Fall 2010) for the PSY404 course, John Gatermann, who graciously helped edit this much anticipated volume.

Michiko Nohara-LeClair

Course Professor

Self- and Social Perception

Church Doctrine: Effects on the Self-Worth of Married Women

Mary Claire Kondro

This study examines if married women who attend churches that teach patriarchal marriage roles have lower self-esteem than married women who attend churches that teach egalitarianism in marriage. Forty participants from two churches were administered the Contingencies of Self-Worth Survey (Crocker, 2003). Although the difference in self-esteem between the two groups was not found to be statistically significant, this study brought to light several issues that could be better controlled in a large-scale study in the future.

Religiosity has been positively correlated with many psychological and physical health benefits including self-esteem after trauma (Reiland & Lauterbach, 2008), satisfaction with overall life (Mansfield et al., 2008), and even increased fertility (Zhang, 2008). Marriage, likewise, has been shown to promote self-esteem, lower depression, and decrease alcohol and substance abuse in former users (Frech & Williams, 2007). However, religiosity has also been positively correlated with unhealthy guilt (Albertsen, O'Connor, & Berry, 2006; Maltby, 2005) and negative coping responses (Bjorck, 2007). Certain types of gender roles in marriage, including patriarchy, appear to also have their drawbacks. Moxnes, in Thagaard (1997), noted that "women's self-worth is being threatened in marriages which are characterized by male dominance" (p. 361) and found that women in patriarchal (traditional) marriages have lower self-esteem than women in nontraditional marriages.

Self-worth is defined as "the sense of one's own value or worth as a person; self-esteem; self-respect" (http://www.dictionary.com/). In the Contingencies of Self-Worth Scale, which is used in this study, Crocker (2003) further dismantles self-worth into components of family

support, competition, appearance, God's love, academic competence, virtue, and approval from others. Egalitarianism can be understood as "affirming, promoting, or characterized by belief in equal political, economic, social, and civil rights for all people" (http://www.dictionary.com/). In this study, egalitarianism refers specifically to equality in marriage. Patriarchy, finally, is defined as "a form of social organization in which the father is the supreme authority in the family, clan, or tribe" (http://www.dictionary.com/).

Patriarchal marriage roles are often found in various Christian denominations due to a literal interpretation of Scriptures that refer to the husband as the head of the household and command wives to be submissive to their husbands. Some churches take this mandate to a more extreme level, believing women are commanded to be submissive because God created women as innately inferior to men. Pevey, Williams, and Ellison (1996) provide an example of this belief in their narrative study of the Southern Baptist Convention. They found that churches within this denomination believe and teach that because women are "first in sin and last in creation" (p. 174), God designed men to be superior and women to be inferior. Reuther (in Pevey et al.) offers this explanation for similar gender role attitudes advocated by religion:

> Wives, along with children and servants, represent those ruled over and owned by the patriarchal class. They relate to man as he related to God. A symbolic hierarchy is set up: God-male-female. Women no longer stand in direct relation to God; they are connected to God secondarily, through the male (p. 174).

Morgan (1987) conducted a study to determine the relationship between religious devoutness and gender-role attitudes. Participants completed a sex-role attitude scale, gender role preference scale, religious commitment scale, self-esteem scale, and a personality-style scale. The results of this study revealed that as religious devoutness increased, belief in traditional or

patriarchal marriage roles increased. As belief in traditional marriage roles increased, self-esteem decreased. Additionally, Morgan found that self-esteem increased if the wife worked outside the home for pay and overall self-esteem was higher in women who were in more nontraditional (egalitarian) marriages vs. traditional marriages.

Past research indicates that the type of marriage a woman is in – patriarchal or egalitarian—can affect her self-worth. The current study explores how self-esteem differs between women who are in egalitarian marriages advocated by their religious beliefs and women who are in patriarchal marriages advocated by their religious beliefs. Specifically, the hypothesis of this study is that married women who regularly attend churches which teach that women hold a subservient role to their husbands will score lower on a self-worth measure than married women who regularly attend churches that advocate egalitarianism in marriage. Participants from patriarchal and egalitarian churches were administered a self-worth survey in order to determine if there was a statistical difference in scores between the two groups.

Method

Participants

Forty-one married women participated in this study, 20 from Williams Temple in St. Louis, MO and 21 from St. Louis Family Church in Chesterfield, MO. One participant from Williams Temple chose to withdraw from the study due to the lengthiness of the questionnaire. The participants were married an average of 22 years (SD=15) and 90 percent of the participants were parents. All of the participants from St. Louis Family Church identified themselves and their husbands as regularly affiliated with the church (as opposed to just visiting the church), and all but one of the participants from Williams Temple identified themselves and their husbands as regularly affiliated with the church. The participant who did not affiliate with Williams Temple

affiliated herself with a denomination that has similar patriarchal marriage views. Unmarried women and widows were excluded from this study, as it was assumed that church doctrines on marriage roles would be most relevant to participants who were currently married.

Churches

The researcher was concerned that the churches involved not only strictly adhere to egalitarian and patriarchal doctrines, but also with ensuring that the participants were actually exposed to and aware of their church's doctrines regarding marriage. Elder Eric Kondro from Williams Temple (Church of God in Christ) confirmed that the church teaches that the husband is the head of the marriage. Williams Temple teaches that the wife is to be submissive to her husband and that women are not to hold positions of authority over men. They believe in the literal interpretation of Scriptures which state that women are to submit themselves to their husbands (Ephesians 5:22 and 1 Peter 3:1), that the fall of mankind in the Garden of Eden cursed women to be ruled over by their husbands (Genesis 3:16), and that women are not to usurp authority over men in church (1 Timothy 2:11-15). The question of whether the congregants were actually exposed to this teaching was answered in the Sunday school service which the researcher attended prior to collecting data. Here, the Sunday school lesson revolved around teaching a hierarchy of authority from God, to man, to woman. One of the contributors of the lesson stated that in a marriage, the wife can be compared to a body without a head. The husband makes up the head of that body, and, as stated by the same contributor, "Two heads on one body is a deformity. God does not make deformities." In other words, a husband and wife who held equal positions in a marriage would be dysfunctional and deformed. The women from Williams Temple who participated in the study were all exposed to this teaching prior to taking the surveys.

St. Louis Family Church (non-denominational) confirmed that they are completely egalitarian and they believe that the Scriptures mentioned above should be interpreted in light of cultural determinants. They believe that Jesus brought equality to all as evidenced by Galatians 3:28: "There is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female: for you are all one in Christ Jesus" (New King James Version). Although the church does not regularly incorporate their views on marriage, specifically, into the regular Sunday services, Pastor John Moore, head of the Congregational Care Department, believes this is implicitly expressed by the fact that the church is jointly pastored by both a man and a woman. Additionally, the researcher has been present at services throughout a two year time frame, and has heard many teachings on the freedom and equality of all people through Christ. Although it was not as easy to ascertain that the congregants are actually exposed to the doctrines espoused by the church, Pastor Moore believes the lack of exposure to teachings about roles in marriage precludes the belief that a wife is to take an inferior role to her husband.

Materials

The Contingencies of Self-Worth Survey (Crocker, 2003, see Appendix A) was used to measure the participants' self-esteem. Questions from this scale examine components from domains such as family support, competition, appearance, God's love, academic competence, virtue, and approval from others. A demographic survey (see Appendix B) was also used to determine the number of years the participants had been married, if they were parents, and if they and their husbands regularly affiliated themselves with the church and denomination in which the study took place.

Procedure

The researcher contacted Williams Temple-Church of God in Christ and St. Louis Family Church and verified that these churches taught patriarchal and egalitarian roles in marriage, respectively. Participants at Williams Temple were requested by the pastor to participate in the study following the conclusion of the service, which the researcher attended. Women who were interested in participating met the researcher at the front of the building. The researcher explained that the purpose of the study was to compare self-esteem scores of married women across denominations. The participants filled out two informed consent forms (see Appendix C), the Contingencies of Self-Worth survey, and a demographic survey. They then received a feedback letter (see Appendix D) with the researcher's contact information and were thanked for their time and participation.

Due to the massive size of St. Louis Family Church (several thousand members) the pastor in charge of the Congregational Care Department asked several women in the church offices and congregation to participate in the study. Participants received typed explanations and instructions that were verbatim to the explanations and instructions given at Williams Temple. They filled out two informed consent forms, the Contingencies of Self-Worth survey, and the demographic survey. They retained one of the informed consent forms and the feedback letter and returned the materials to the Congregational Care Department. Additionally, the researcher attended a church service and recruited participants in the lobby. They received verbal instructions and followed the same procedure as all of the other participants.

Results

The hypothesis of this study was that married women who regularly attend churches which teach that women hold a subservient role to their husbands would score lower on a self-

worth measure than married women who regularly attend churches that advocate egalitarianism in marriage. An independent samples t-test revealed that there was not a statistically significant difference between the self-esteem scores of married women in a patriarchal church (M=31.33) and the self-esteem scores of married women in an egalitarian church (M=33.6), t(38)= 1.581, p >.05.

Discussion

Although the results of this study did not confirm the research hypothesis, the computed value was only .103 away from reaching the critical value. Several limitations in the study may have contributed to the lack of statistical significance. The first of these problems was the small sample size. The researcher originally planned to have a minimum of 100 participants, but a number of factors resulted in a sample size of only 40. First, although the researcher contacted over 18 churches, only 3 responded. The reason for the reluctance of churches to allow research to take place in their congregations would be an interesting avenue of research to explore in and of itself. This study was also constrained by time – considering that church services are typically held on Sundays, it was a limitation that data could only be gathered at one church per week, especially since the process of scheduling a visit took weeks in and of itself. Additionally, the Contingencies of Self-Worth survey was originally intended to measure the self-esteem of college students, and thus may not have been the best survey to use for the constructs the study was attempting to measure. Another limitation to consider is that participants may not have responded accurately due to the length of the survey or feeling rushed to exit the church building after the service.

Should this study be replicated in the future, it is recommended that researchers obtain a much larger sample size and allow extra time to account for potential non-replies from solicited

churches. Perhaps a measure could be designed relating specifically to self-worth in relation to marriage and religion. It would be beneficial to determine how often and to what extent participants are exposed to the respective marriage doctrines and what their feelings are about the marriage roles advocated by their churches. It might also be interesting to compare between age groups to see if traditional vs. modern views on marriage impacts self-esteem in relation to church doctrines about marriage. This topic is a worthwhile avenue of research to pursue further because self-esteem has been shown to be affected by patriarchy in previous studies and it would be beneficial if churches were somehow able to compensate for the impact of their doctrines on married women's lowered self-esteem without modifying their chosen religious beliefs.

References

Albertsen, E., O'Connor, L., & Berry, J. (2006). Religion and interpersonal guilt: Variations across ethnicity and spirituality. *Mental Health, Religion & Culture, 9*(1), 67-84. Retrieved October 8, 2008, from Academic Search Premier database.

Bjorck, J. (2007). Faith, coping, and illusory control: Psychological constructs with theoretical ramifications. *Journal of Psychology and Christianity, 26,* 195-206. Retrieved October 9, 2008, from Academic Search Premier database.

Crocker, J. (2003). *Contingencies of Self-Worth Scale.* Retrieved October 2008 from http://www.rcgd.isr.umich.edu

Electronic Commerce. *Dictionary.com*. Retrieved October 6, 2008 from http://dictionary.com/

Frech, A., & Williams, K. (2007, June). Depression and the psychological benefits of entering marriage. *Journal of Health & Social Behavior*, *48*(2), 149-163. Retrieved October 8, 2008, from Academic Search Premier database.

Maltby, J. (2005). Protecting the sacred and expressions of rituality: Examining the relationship between extrinsic dimensions of religiosity and unhealthy guilt. *Psychology and Psychotherapy*, *78*, 77-93. Retrieved September 19, 2008, from Academic Search Premier database.

Mela, M., Marcoux, E., Baetz, M., Griffin, R., Angelski, C., & Degiang, G. The effect of religiosity and spirituality on psychological well-being among forensic psychiatric patients in Canada. (2008). *Mental Health, Religion, & Culture, 11*, 517-532. Retrieved October 7, 2008 from Academic Search Premier database.

Morgan, M. (1987). The impact of religion on gender-role attitudes. *Psychology of Women Quarterly*, *11*, 301-310. Retrieved November 11, 2008 from Academic Search Premier database.

Pevey, C., Williams, C., & Ellison, C. (1996). Male god imagery and female submission: Lessons from a southern Baptist ladies' bible class. *Qualitative Sociology*, *19* (2), 173-191. Retrieved November 12, 2008 from Academic Search Premier database.

Reiland, S., & Lauterbach, D. (2008). Effects of trauma and religiosity on self-esteem. *Psychological Reports*, *102*(3), 779-790. Retrieved October 5, 2008, from Academic Search Premier database.

Thagaard, T. (1997). Gender, power, and love: A study of interaction between spouses. *Acta Sociologica (Taylor & Francis Ltd)*, *40*(4), 357-376. Retrieved October 4, 2008, from Academic Search Premier database

Zhang, L. (2008). Religious affiliation, religiosity, and male and female fertility. *Demographic Research*, *19*, 233-261. Retrieved October 1, 2008, from SocINDEX with Full Text database.

Author Note

Mary Claire Kondro

mk338@lionmail.lindenwood.edu

(636) 627-1153

The researcher thanks Dr. Mason for his help in distinguishing the doctrines of various denominations, Dr. Nohara-LeClair for her invaluable assistance in formulating this study, and Dr. Biri for answering numerous questions about surveys and scales. Special thanks to the married women of St. Louis Family Church and Williams Temple for their willingness to participate in this study, as well as Pastor John Moore and Elder Eric Kondro for facilitating the participation of their churches. Finally, thanks to Mr. Samuel Voth Schrag for his interest and willingness in facilitating his church's participation although circumstances outside of his control precluded their participation.

Appendix A – Contingencies of Self-Worth Scale

INSTRUCTIONS: Please respond to each of the following statements by circling your answer using the scale from "1 = Strongly disagree" to "7 = Strongly agree." If you haven't experienced the situation described in a particular statement, please answer how you think you would feel if that situation occurred.

		Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
1.	When I think I look attractive, I feel good about myself.	1	2	3	4	5	6	7
2.	My self-worth is based on God's love.	1	2	3	4	5	6	7
3.	I feel worthwhile when I perform better than others on a task or skill.	1	2	3	4	5	6	7
4.	My self-esteem is unrelated to how I feel about the way my body looks.	1	2	3	4	5	6	7
5.	Doing something I know is wrong makes me lose my self-respect.	1	2	3	4	5	6	7
6.	I don't care if other people have a negative opinion about me.	1	2	3	4	5	6	7
7.	Knowing that my family members love me makes me feel good about myself.	1	2	3	4	5	6	7
8.	I feel worthwhile when I have God's love.	1	2	3	4	5	6	7
9.	I can't respect myself if others don't respect me.	1	2	3	4	5	6	7
10.	My self-worth is not influenced by the quality of my relationships with my family members.	1	2	3	4	5	6	7

		Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
11.	Whenever I follow my moral principles, my sense of self-respect gets a boost.	1	2	3	4	5	6	7
12.	Knowing that I am better than others on a task raises my self-esteem.	1	2	3	4	5	6	7
13.	My opinion about myself isn't tied to how well I do in school.	1	2	3	4	5	6	7
14.	I couldn't respect myself if I didn't live up to a moral code.	1	2	3	4	5	6	7
15.	I don't care what other people think of me.	1	2	3	4	5	6	7
16.	When my family members are proud of me, my sense of self-worth increases.	1	2	3	4	5	6	7
17.	My self-esteem is influenced by how attractive I think my face or facial features are.	1	2	3	4	5	6	7
18.	My self-esteem would suffer if I didn't have God's love.	1	2	3	4	5	6	7
19.	Doing well in school gives me a sense of self-respect.	1	2	3	4	5	6	7
20.	Doing better than others gives me a sense of self-respect.	1	2	3	4	5	6	7
21.	My sense of self-worth suffers whenever I think I don't look good.	1	2	3	4	5	6	7
22.	I feel better about myself when I know I'm doing well academically.	1	2	3	4	5	6	7
23.	What others think of me has no effect on what I think about myself.	1	2	3	4	5	6	7

		Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree
24.	When I don't feel loved by my family, my self-esteem goes down.	1	2	3	4	5	6	7
25.	My self-worth is affected by how well I do when I am competing with others.	1	2	3	4	5	6	7
26.	My self-esteem goes up when I feel that God loves me.	1	2	3	4	5	6	7
27.	My self-esteem is influenced by my academic performance.	1	2	3	4	5	6	7
28.	My self-esteem would suffer if I did something unethical.	1	2	3	4	5	6	7
29.	It is important to my self-respect that I have a family that cares about me.	1	2	3	4	5	6	7
30.	My self-esteem does not depend on whether or not I feel attractive.	1	2	3	4	5	6	7
31.	When I think that I'm disobeying God, I feel bad about myself.	1	2	3	4	5	6	7
32.	My self-worth is influenced by how well I do on competitive tasks.	1	2	3	4	5	6	7
33.	I feel bad about myself whenever my academic performance is lacking.	1	2	3	4	5	6	7
34.	My self-esteem depends on whether or not I follow my moral/ethical principles.	1	2	3	4	5	6	7
35.	My self-esteem depends on the opinions others hold of me.	1	2	3	4	5	6	7

Appendix B

Demographic Survey

Please Circle Your Answer or Fill in the Blank

1. How many years have you been married?

   _____

2. Are you a parent or legal guardian of children of any age?

   YES NO

3. Do you affiliate yourself with the denomination of the church you are currently attending?

   YES NO

4. If no, what denomination do you affiliate yourself with?

   _____

5. Does your husband affiliate himself with the same denomination as you?

   YES NO

6. If no, what denomination does your husband affiliate himself with?

   _____

7. Do you consider your husband to be the head of your household?

   YES NO UNSURE

Appendix C

Informed Consent Form

I, _____(print name), understand that I will be taking part in a research project that requires me to complete surveys asking about my demographic information and perceived self-worth. I understand that I should be able to complete this project within 20 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information obtained from my responses will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. I verify that I am currently legally married. I verify that I am at least 18 years of age and am legally able to give consent.

_____ (Signature of participant)

Date:_____

_____ (Signature of researcher obtaining consent)

Date:_____

Student Researcher's Name and Number:
Mary Claire Kondro
(636) 949-4731
mk338@lionmail.lindenwood.edu

Supervisor:
Dr. Nohara-LeClair
(636) 627-1153
mnohara-leclair@lindenwood.edu

Appendix D

Feedback Letter

Thank you for participating in this study. The study was conducted in order to determine if the self-esteem scores of married women vary across church and denomination type.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Mary Claire Kondro
(636) 627-1153
mk338@lionmail.lindenwood.edu
Supervisor:
Dr. Nohara-LeClair
(636) 949-4731
mnohara-leclair@lindenwood.edu

Does the Type of Crime Determine if an Image of a Certain Criminal is Pictured?

Amanda Vance

People have culturally been inclined to visualize a perpetrator simply based on the description of the crime. This experiment seeks to determine if a generalized criminal is expressed by the survey group for each crime. Simply put, it will identify if there exists a similar stereotype for each crime described. Each participant completed a questionnaire to identify their demographics. Next was given five crimes which were about robbery, shooting, rape, stolen identity, and murder to read over with the victim and location information omitted. Participants were asked to visualize and describe the perpetrator in each crime scene. The results concluded that there was a difference in the perpetrator and the type of crime.

There are currently many different crimes being reported in the news. There are also many different types of shows that are aired on television dealing with crime. These shows can be very unrealistic to actual information about either crimes that are committed or telling the story of a serial rapist or killer. Once people have seen so much crime on the media, they begin to stereotype the crime or people. Just based on hearing the type of crime would be able to picture the criminal without really knowing who committed the crime. This is done by taking out the bias information, which consists of the description of the victim and where the crime was committed. If this information was not available, will a person picture a specific type of person for that type of crime?

Ask and Granhag (2005) researched to see if the judgment of deciding whether the person who committed the crime was guilty or not was based on the information that

was provided. There were two different experiments: one with police investigators and the other was conducted on undergraduate students. Each experiment was exactly the same, but there were two groups within these experiments. One half of the participants were given a potential motive for the prime suspect to kill the victim and the others received alternative culprit (Ask & Granhag). According to Ask and Granhag, they "predicted that the initial hypothesis provided to participants would influence the subsequent interpretation of the case material in a confirmatory direction (48)." Ask and Granhag also predicted that the degree of closure and the initial hypothesis from the case will motivate a cognitive closure that would freeze the initial hypothesis provided in the background information. Ask and Granhag's results showed that the students were affected by the initial hypothesis manipulation on their provenance of guilt and interpretation of observations. Participants who were given the alternative perpetrator viewed the prime suspect less likely to be guilty (Ask & Granhag). It also confirmed that with or without the additional information the police investigators examined the crime more often and wanted more explanation about the crime. Until they had enough information then they would decide if the prime suspect was guilty or not guilty.

Another study by Herzog (2003) took place in Israel. The study was based on whether the public perceptions of crime seriousness would have an affect if the person was either Jewish or Arab. The study had a sample of 944 Israeli adults who were selected, were randomly picked from the 200 up-to-date telephone directories. Herzog conducted a telephone survey dealing with their criminal offenses. Since telephone calls were self-reported Herzog made many additional follow-up calls to the participants, to have the highest accurate level of results. He was able to reach to a level of 72%

accuracy. The questionnaire was very short, consisting of only 18 crime scenarios. The participants were given a scale of 1= serious at all to 11=very serious when determining the level of seriousness for the crime. The 18 crime scenarios were asked randomly except for the first two to ensure the participants understood the rating scale. Each crime given included the background information about the offender, the criminal act and the victim (Herzog). The only two ethnicities of the offender given in the experiment were Jewish or Arab. From this experiment the results showed that there were no significant differences between the two ethnicities: Jewish and Arab on the level of seriousness for the crime.

A study conducted by Stephen, Valentine, and Memon (2008) wanted to see if there were a difference in accuracy on how a witness could identify the criminal. They wanted to see if there was a difference that may assist the witness' memory about the criminal. For this study the participants witnessed a crime, in which there were four different actors for the study. Then between 7 to 25 days later the participants were asked to come back in to identify the criminal. There were four different ways the experimenters used for identifying the criminal. They first used either selected foils (pictures) or moving images (actual people). Then it was divided into two more groups where either the culprit was present or the culprit was absent. But they found no significant difference in how the participants would identify the criminal more correctly than in other ways.

According to Walker, Spohn, and Delone (2008) crimes that receive more attention from media, criminal justice policymakers, and others are "street crimes". These street crimes are usually classified as murder, robbery, and rape. These crimes are

also knows as "black crimes", in which Americans tend to believe that a typical offender is African American and associates the word crime to them (Walker, Spohn & Delone). Also in 2003 a total of 48.5% African Americans were arrested for murder, 54.5 % arrested for robbery, and 33.3 % arrested for rape. Statistics have shown that racial minorities are arrested far more than whites. One reason for this is the impact that African Americans have on for more serious crimes. According to the NCVS (National Crime Victim Survey) reported that the 46.5% of the victims surveyed claimed their offender to be African American for single-offender robberies and 22% for assaults. Also the NCVS reported that for all crimes of violence 63% of victims claimed the criminal to be white, 47.9% of rape victims claimed the criminal to be white, 65.4% of assault victims stated the criminal to be white also. But as for robbery victims, 40.8% claimed the criminal to be white and 39.5 claimed the criminal to be a black (Walker, Spohn & Delone).

A study conducted by Hurwitz and Peffley (1997) was to test that "stereotypes of African Americans should influence attitudes on crime policy primarily when criminals are black, crimes of violent, polices are punitive, and no individuating information seriously undercuts the stereotype" (375). The experimenters wanted to focus on there areas which included the nature of the crime, the nature of the policy, and the nature of the criminal. So they had a series of surveys which the target race was in different questions and varied in the surveys. The two target races that were used were white and black perpetrators. They used models in which were to determine if the stereotypes of African American had more prominent in determining responses of blacks than of white targets and vise versa for whites. Hurwitz and Peffley learned that only when the crime

was violent and that polices were punitive then there were negative stereotypes. In which it seemed more likely that blacks were guilty of the crime. They conclude that this only occurs when a certain case fit the more common stereotype.

For this study, participants were inclined to visualize a perpetrator merely based on the description of the crime provided. But for the type of crime the participants were to describe a different perpetrator for each crime. This study was to verify that merely the characteristics of a crime will conjure an image of the perpetrator. It will also more precisely differentiate those with more and less exposure to crime and who they would visualize. This study is important because if the hypothesis is correct, the information is crucial regarding people's prejudicial attitudes and may have implications on eyewitness account. This could help with reasons why some people are more inclined to commit that crime if they are usually stereotyped for a criminal.

Method

Participants

The participants who were included in the experiment were undergraduate students and graduate students from Lindenwood University. Participants that were not from Lindenwood University were adults at least 18 years of age or older from the greater St. Charles community or other communities. In the experiment, there were a total of 104 participants included. Four of the participants were excluded, due to the fact that they provided very little information about the criminal or did not answer any questions. The experiment was conducted on the Lindenwood University campus in the psychology labs, a classroom on campus or in a separate room that was off campus where

the lighting was good and the noise level was at a minimum. The participants either took the experiment alone or with a group.

For the study out of the 100 participants included, there were a told of 42 men and 58 women that participated. The age range for the participants' population was between 18 to 66 years old. The mode for the age was 20 and with a standard deviation of 10.381. With a total of 85% of the participants were white, non-Hispanic, 15% were of the other races. The highest levels of education for the participants were at least 2 years of undergraduate and or above, with a mean of 2.86 years, and the standard deviation of 4.537 years.

There were three ways the participants were recruited for the experiment. The experimenter placed a description sheet and a sign-up sheet on the Human Subject Pool (HSP) board to recruit participants from the Human Subject Pool (see Appendix A). Then the experimenter asked other professors if they could have either one or more of their classes participate in the experiment. In the classes, the experimenter came during the class and administered the packet with the inform consent forms, instructions, questionnaire, crime scenarios, the list of characteristics to be filled out to describe the criminal for each crime and feedback letter to the class (see Appendix B for the class room script). The professor was present while the experiment was being administered. All participants were given a piece of candy once they were finished with the experiment.

Materials and Procedure

During the experiment the participants were given two informed consent forms to read over. The informed consent form was also briefly read to the participants too (see Appendix C). The participants were told they can terminate the experiment at anytime

while the experiment is being administered. The participants were asked to sign both the informed consent forms and were given one of the informed consent forms to keep. Participants were given an instruction sheet to read over (see Appendix D). Once the participants finished reading over the instructions, they were told they could ask questions about the experiment any time they did not understand something about the experiment. Next, the participants were asked to fill out the short questionnaire (see Appendix E). Some of the questions that were presented on the questionnaire were about, type of sex, age, highest level of education, and race. Also, questions that dealt with how much media they associated with that were primarily about crime. Then, the participants were given five different types of crimes that were committed to read (see Appendix F). The crimes the participants read were about burglary, shootings, rape, stolen identities, and murder. After each crime, the participants were given a survey of general characteristics which the participant filled out in detail to describe the person they had in mind for who committed the crime (see Appendix G). The participants did this for all five crimes in the experiment. Once the experiment was completed the participants were given a feedback letter with the experimenter's number and email to contact if they have any follow-up questions or if they want to know the results of the experiment (see Appendix H). All the participants received a piece of candy once they completed the study. The questionnaires had a participant number that matched with the same participant number on the description of criminals for each crime scenarios. However, these numbers were not traceable to any particular participant, thereby protecting the identity of the respondents.

Results

The results conducted for this study were based from conducting a descriptive frequency, which consisted of the mean, mode, and standard deviation, minimum and maximum. The results showed that the hypothesis stated above was correct. It stated that participants were inclined to visualize a perpetrator merely based on the description of the crime provided. But for the type of crime the participants would describe a different perpetrator for each crime. So it concludes that the null hypothesis was rejected. From the results only one crime scene was reported to be black and the other four was reported as white. Even though white was answered more often each crime scene still had its differences for what the criminal would look like.

Below are the tables for each crime scene which shows the mode (the most answered statement about the criminal's description) along with the mean and standard deviation. Also the percentage for sex, race, and age is stated above the tables:

Crime One (robbery):

Eighteen percent suggested female and 82 % suggested male, 20% suggested black and 63% suggested white, 50% suggested 19-25 years of age

	Mode	Mean	Std. Deviation
Sex	Male	1.82	0.386
skin color	white	1.83	0.508
Age:	19-25	25.32	5.505
Hair color:	Brown	2.62	4.797
hair style:	short	8.1	11.118
Height:	5'7-6'0	68.4	3.502
Weight:	150-165	163.85	27.168
Eye Color:	brown	2.9	0.784
Eye Shape:	oval	3.78	4.328
Eye Brows:	bushy	2.31	1.305
Nose:	big or normal	9.81	15.774
Lips:	thin	4.09	4.099
Facial Hair:	none	2.86	3.004
description of facial hair	beard	2.67	1.237
Ears:	normal	2.07	1.585
Hair Line:	normal	3.24	2.792
Distinguishing Marks:	tattoos and/or piercing	8.68	12.994
Teeth:	discolored	15.26	18.218
Cheek Bone Structure:	high and normal (tied)	2.58	1.598

Crime Two (shooting):

Ninety point eight percent suggested male, 0.9% suggested female, 63.3% suggested black, 21.1% suggested white, 41.3% suggested 20 to 23 years of age

	Mode	**Mean**	**Std. Deviation**
sex	male	1.99	0.1
skin color	black	1.31	0.527
Age:	20-23	26.64	17.622
Hair color:	black	1.45	0.787
hair style:	short with a style	6.48	9.786
Height:	6'0-6'2	70.31	9.134
Weight:	180-190	178.44	26.68
Eye Color:	brown	2.94	0.625
Eye Shape:	round	3.94	4.167
Eye Brows:	bushy	2.59	1.883
Nose:	big	6.49	9.437
Lips:	big	3.27	2.972
Facial Hair:	none	1.53	0.502
description of facial hair	style (gottee, fu-man)	4.8	2.524
Ears:	small and big	2.76	4.325
Hair Line:	normal	2.07	1.72
Distinguishing Marks:	tattoos	3.81	3.937
Teeth:	white and straight	14.24	16.835
Cheek Bone Structure:	normal	1.64	0.876

Crime Three (rape):

Nearly ninety percent suggested male, 0.9% suggested female, 25.7% suggested black, 56.9% suggested white, 45.8% suggested 30 to 40 years of age

	Mode	**Mean**	**Std. Deviation**
sex	Male	1.99	0.101
skin color	White	1.81	0.701
Age:	30-40	30.01	7.671
Hair color:	Brown	3.14	3.853
hair style:	Short	6.36	8.477
Height:	5'0-5'8	68.74	4.482
Weight:	190-200	181.72	28.615
Eye Color:	Brown	3.21	3.248
Eye Shape:	Round	4.73	8.688
Eye Brows:	Bushy	3.18	5.651
Nose:	Big and pointy	5.96	10.626
Lips:	Thin and normal	3.33	1.808
Facial Hair:	Yes	1.46	3.248
description of facial hair	Beard and/or mustache	4.84	8.688
Ears:	Normal and big	2.19	5.651
Hair Line:	Normal and receding	3.29	10.626
Distinguishing Marks:	No markings	4.13	1.808
Teeth:	Discolored or white	18.74	21.18
Cheek Bone Structure:	normal	2.41	1.666

Crime Four (stolen identify):

Seventy-eight percent suggested male, 13.8% suggested female, 0.9% suggested black, 76.1% suggested white, 9.2 % suggested 35 years of age

	Mode	**Mean**	**Std. Deviation**
sex	Male	1.99	0.1
skin color	White	1.81	0.701
Age:	35	30.01	7.671
Hair color:	Brown or blonde	2.62	0.787
hair style:	Short	8.1	9.786
Height:	5‘5-5’9	4.73	8.688
Weight:	140-165	181.72	26.68
Eye Color:	Blue	2.9	0.784
Eye Shape:	Round	4.73	4.167
Eye Brows:	Bushy or thin	3.18	1.883
Nose:	Small, thin, long	9.81	9.437
Lips:	Thin	4.09	1.808
Facial Hair:	None	2.86	3.248
description of facial hair	Beard, scruffy, clean shaved	2.67	1.237
Ears:	Normal or small	2.07	5.651
Hair Line:	Normal or receding	3.24	10.626
Distinguishing Marks:	Piercing or none	4.13	1.808
Teeth:	White and straight	18.74	16.835
Cheek Bone Structure:	high	2.41	0.876

Crime Five (murder):

Seventy-four point three percent suggested male, 16.5% suggested female, 29.4% suggested black, 50.5% suggested white, 45% suggested 22 to 25 years of age

	Mode	**Mean**	**Std. Deviation**
sex	Male	1.82	0.1
skin color	White	1.31	0.527
Age:	22-25	25.32	7.671
Hair color:	Black	1.45	3.853
hair style:	Short or long	6.48	8.477
Height:	6'0-6'2	70.31	3.502
Weight:	180-200	178.44	27.17
Eye Color:	Brown	2.94	0.784
Eye Shape:	Oval and round (tied)	4.73	4.328
Eye Brows:	Bushy or shaped	3.18	1.305
Nose:	big or small	5.96	15.77
Lips:	Thin or big	3.33	1.305
Facial Hair:	None	1.46	15.77
description of facial hair	Styled (goatee, fu-man)	4.84	4.099
Ears:	Normal or big	2.19	3.004
Hair Line:	Normal	3.29	1.237
Distinguishing Marks:	tattoos and/or piercing	4.13	3.937
Teeth:	White and straight	15.26	16.835
Cheek Bone Structure:	high and normal	2.58	0.876

Discussion

Based on the results, the study shows that even though the background information about a crime were omitted, information about the victim involved and where the crime was committed, can still conjure up a picture of the criminal in the person's mind. It shows how having very little information about a subject can still make a person think of a person that would fit this action. Stereotypes do play an important role in everyone's actions, even if they do not realize it. It just shows how stereotyping can be an unconscious behavior, in which we do not know we are doing this type of behavior.

Some additional results that were found from the study were that only 40% of the participants watched the news just mainly to learn about information on the crimes that were committed. Also 48% of participants read the news paper just to see the crimes that were committed. A high of, 74% of participants watched a certain type of crime show, such as CSI, Criminal minds, and Without a Trace. This percentage was very shocking to know that people would rather watch fictional information over non-fictional information. From these results it could explain why only one crime scene was stated to be African American more often. Since there is less then 50% of the participants that watch or read about the real crimes being committed the participants who are watching more of the fictional crime shows which usually have white males committing the crimes. Where as, stated from research above the crimes that are being reported are more based about African American's committing the crimes.

Many of the participants actually enjoyed participating in the study and found it very interesting. The majority of the participants could not believe how little amount of

information that was given could still make them think of a person who would have committed that crime. Also, many of the participants would give more information about the criminal which was not asked for. For example, in the (stolen identity) the participants would state at the bottom of the page that the criminal still either lived with his parents or mother in the basement. Also included was that the criminal was a lonely middle aged man who lived on his computer all day long. Another participant stated that the guy who raped the victim, had been stalking the victim at the bar all night. One other thing that was found from the experiment was that many of the participants would give some very interesting descriptions that would have never been thought of. Of these a great deal of people would stated that criminal wore a mask for one of the crimes. They also wrote done that the criminal could have had pink or purple hair and it could have been an afro, or unclean. Some stated that their facial hair was a fu-man-chu or some other type of style and that the criminal's teeth were gold, damaged, or even wore a grill. Some participants stated that they did feel a little racist after completing the study. But the majority of the participants found the study very interesting and seems to want to talk about their information.

This type of study can help with understanding why a certain type of person is convicted more often than another type of person. It may help with a better understanding of how people stereotype other people based on their actions. Also, it shows how people may say we do not classify people as criminals and that the criminal creates their own self, but really we do. Based from this experiment, we can look at someone and classify them as a criminal or some other stereotype.

Some limitations for this study were that there was a small sample size. Even though there were 100 participants it still did not cover all ranges of differences for age, race and sex. With a larger sample size, which could have a range of ages may have changed the results in either a minor and major way. This study could have had more participants for the ages that only included very little in that division. Most of the participants were in their 20's only. So, with such a young age group they really do not know what type of issues is addressed in society. With the wide range of responses it was hard to categorizer every response. Along with that, it was hard to figure out what the participants might have been describing when they would draw a picture of the item. Another limitation that occurred was some participants did not understand the directions on who they were describing. So the changing of wording the study from who pops in your head, to who do you think commits this crime more often helped a little better for their understanding. Some participants thought they were describing the criminal that was stated in the crime scene. Because of the wording some of the participants would skip some of the questions. So it was not known if they thought the criminal did not have anything for that item distinguishing. Also the study was very time consuming since so much information was needed.

Some future directions for the study are maybe looking at the difference in how much media the participant watches based on crimes. Also, see if there is a difference in responses based on what type of media they do watch or read about crime. Could people that read about real crimes have a different perspective then people that watch the shows about the fake crimes? See if different genders imagine a different type of profile for the certain types of crimes. Research if having bias information available, such as

information about the victim and the place, could present a different profile compared to a crime that leaves out the bias information. Also, would there be a difference if pictures were used instead of open-ended questions.

References

Ask, K. & Granhag, P. A. (2005). Motivational sources of confirmation bias in criminal investigations: The need for cognitive closure. *Journal of Investigative Psychology and Offender Profiling, 2,* 43-63.

Darling, S., Valentine, T. & Memon, A. (2008). Selection of lineup foils in operational contexts. *Applied Cognitive Psychology, 22,* 159-169.

Herzog, S. (2003). Does the ethnicity of offenders in crime scenarios affect public perceptions of crime seriousness? A randomized survey experiment in Israel. *Social Forces, 82,* 757-781.

Hurwitz, J. & Peffley, M. (1997). Public perceptions of race and crime: The role of racial stereotypes. *American Journal of Political Sciences, 41,* 375-401.

James, L. M., Scott, J., Pratt, D., Leding, J. K. & Arnal, J. D. (2007). 'Good, you identified the suspect… but please ignore this feedback': Can warning eliminate the effects of post-identification feedback. *Applied Cognitive Psychology, 21,* 1037-1056.

Nijhok, K. S., de Kemp, R. A. T., Engels, R. C. M. E. & Wientjes, J. A. M. (2008). Short-term criminal pathways: Type and seriousness of offense and recidivism. *The Journal of Genetic Psychology, 169,* 345-359.

Walker, S., Sphon, C. & DeLone. (2007). *The color of justice: Race, ethnicity, and crime in america* (4th ed.). Belmont, CA: Thomson Higher Education.

Author Note

I would like to thank all the participants that for volunteering in the study. Along with, thanking my family and friends for their support and help with also taking part in the study. I would like to show much gratitude to Dr. Biri and professor Marhanka for letting me come to their class and administering my study. I would also like the thank Dr. Nohara-LaClair for all the help with getting my study put together and helping me with my results. As for my mom I would like to show great appreciation towards her for the help on finishing my results.

Correspondence concerning this article should be addressed to Amanda Vance, 2406 Stoney Brook Dr., O'Fallon, MO 63368. E-mail: ajvtwin86@aol.com.

Appendix A

Participant Recruitment Description

For this experiment you will be given a short questionnaire to complete. Next you will be reading about five different crime scenarios. After each crime scenario you will be given a survey of characteristics which you fill out to best describe the criminal. This experiment should take about 15 minutes to complete.

Appendix B

Classroom recruitment script

My name is Amanda Vance and I am conducting an experiment for my advance research methods class. I am here today to ask for you to participant in my experiment. This should take no more then 15 minutes to complete. It is your choice to participate or not and by not participating will not effect your grade for you class and extra credit will not be given if you do participate. For this experiment you will be given a short questionnaire to complete. Next you will be reading about five different crime scenarios. After each crime scenario you will be given a survey of characteristics which you fill out to best describe the criminal. I will be given you a packet that contains two informed consent forms, instructions, feedback letter, questionnaire, the five crime scenarios, and five surveys with questions that describe what the criminal would look like. Once you get the packet please read over the informed consent forms and sign both. Please keep the informed consent form that is signed by the experimenter and hand back the other one signed. Next fill out the questionnaire and once you finished you may go on to reading the crime scenarios. Read the first crime scenarios and fill out the first characteristic survey to the best of detail. Once finished with the first crime scenario do the same for the other four crime scenario. Once you have finished please tear off the informed consent form, feedback letter and those are yours to keep and bring up the rest of the packet to me. Thanks very much for participating in my experiment I greatly appreciate it. If you have any questions you may ask at any time the experiment you may ask. If you would like to know the results for the experiment when the experiment is finished my contact information is on the informed consent form and feedback letter.

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about how much exposure I have to stories about crime. Following this questionnaire, I understand that I will be reading scenarios about a crime scene and asked to make judgments about the perpetrator of the crime. I understand that this experiment contains crimes that deal with burglary, shootings, rape, stolen identities, and murder. I understand that I will not experience a level of discomfort beyond what is normally encountered in everyday life or when watching the news coverage about similar crimes. I understand that I should be able to complete this project within 20 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I understand that my ethnic background may be used in the results of the experiment. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and contact information:

Amanda Vance: (314) 520-7687 AJVTWIN86@aol.com

Supervisor's name and contact information:

M. Nohara-LeClair (636) 949-4371 mnohara-leclair@lindenwood.edu

Appendix D

Instructions

You will first be asked to fill out a short survey. You may choose not to answer some questions.

Next you will be give five different crime scenarios which will be read to you. Once the crime scenario has been read you will then be asked to describe the criminal and your answers will be recorded. You will be asked to do this a total of five times. If you feel like not finishing this experiment you are allowed to stop at any time. Also you are allowed to ask questions throughout the experiment while it is being administered if you do not understand something.

Appendix E

QUESTIONNAIRE

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1. Are you MALE FEMALE?
2. What is your age? _____ Years old
3. What ethnic background are you?

   Asian or Pacific Islander Black, Non-Hispanic Hispanic

   American Indian or Native Alaskan White, Non-Hispanic

   Non-resident Alien or Other
4. Highest level of educational background completed?

   High school Or _____ years of college undergraduate and beyond
5. Do you watch the news often to find out what crimes are committed?

   YES NO
6. When was the last time you watched the news just to see what crimes were committed? _____ days ago
7. How many times a week do you watch the news to see what crimes were committed? _____ times a week
8. Do you read the newspaper/internet journals to see what crimes have been committed?

   YES NO

9. When was the last time you read the newspaper/internet journals just to see what crimes were committed? _____ days ago
10. How many times a week do you read the newspaper/ internet journals to see what crimes were committed? _____ times a week
11. a.) Are you more interested in watching a certain show that is based on a certain subject that deals with crime? (such as serial killers, lifetime shows cops etc.)

    YES NO

If so please write below all programs you watch to that deals with a specific crime(s).

_____

_____

_____

_____

Appendix F

Crime Scene One

In the past two weeks a number of houses have been broken into and many valuables were stolen. The main things that the criminal would steal from these houses were mostly certain types of jewelry, fine clothing and any cash that may have been found. This criminal usually came during the evening when no one was at the house.

Crime Scene Two

Reported last night a fight broke out between two people outside a bar. Apparently someone said a comment and the other person didn't like it. During the fight another person pulled out a gun and shot at the two victims which ended up hitting one of the victims that were fighting. The person with the gun fled the scene of the crime and no witnesses seen the person with the gun. Some state that the person with the gun may have been out for revenge about a drug deal towards one of the victims.

Crime Scene Three

A victim reported being raped over the weekend by a stranger the victim didn't know. The victim was walking back to their house at night around 1:30 am after a night out with friends. When a person came out from behind the victim and healed a knife to the victim's neck. The person brought the victim to a back alley where the victim claimed was raped. The victim has no recollection on what this person may have looked like do to it was dark and the person's face was covered by a hood.

Crime Scene Four

It was reported that a person hacked into the computer systems of a department store. This person was able to get all identities, social security numbers and the credit card information of over 1,000 customers. The criminal was able to crack all the passwords to the data base of the department store and load up many of the costumers' information. It is not known if this person was able to use anyone's identities but an investigation in on its way.

Crime Scene Five

A 24 old victim was found in an apartment on a Saturday morning. The victim was found to have been stabbed multiple times in the back. There are also signs of that the victim was strangled and beaten. The victim's roommate was the one that found the body lying in the apartment. It was last heard that the victim was last seen at a popular club with some friends. The victim's roommate lost trace of victim at the club so figured they caught a ride home with someone else.

Appendix G

Survey questions for description of criminal

Please answer all the characteristics stated below to describe the criminal you have in mind for each type of crime. Please be as detailed as possible.

1. Type of sex?
2. Type of skin color?
3. What is their age?
4. What is the color of their hair?
5. How does their hair look like? (such as the cut and length)
6. How tall do you think the criminal would be?
7. What is the weight of the criminal?
8. Type of eye color they have?
9. What is the eye shape?
10. How do their eye brows look?
11. What does their nose look like?
12. How do their lips look?
13. Do they have facial hair?
    a. If so please describe how it would look.
14. What does their ears look like?
15. How does their hair line look like?
16. Do they have any distinguishing markings (such as birthmarks, piercing, tattoos etc.)?
17. What does their teeth look like and what is the color of them?
18. How does their cheek bone structure look?

Crime Scenario _____

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix H

Feedback letter

Thank you for participating in my study. The questionnaire was used in order to determine the base of experience people is exposed to crime information. I am interested in finding out weather people conjure up images of criminals based solely on the description of the crimes, and if so, weather these images are consistent across different individuals.
Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Amanda Vance Cell phone: (314) 520-7687

Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Overattribution Effect

Sally Eimer

The purpose of this study was to investigate the types of judgments undergraduate students made regarding a child's behavior they observed in a brief video clip. Their attributions were expected to be affected by a key situational factor that only some were informed of. The researcher hypothesized that participants informed that the child, in the clip, was recently diagnosed with leukemia would attribute the child's behavior to situational factors, whereas participants not given any information about the child in the clip, would attribute the child's behavior to things intrinsic of the child.

How does someone come to make a judgment about another person's behavior? Is it something in the situation that causes a person to behave a certain way or is it something in the person's disposition? In 1958, Fritz Heider (as cited in Tetlock, 1985) embarked upon a search to find out how people make judgments about other's behavior. From Heider's research, Lee Ross continued to research and explain this. Ross (as cited in Pietromonac & Nisbett, 1982) termed the inclination observers have to over attribute behavior to dispositional factors and under attribute behavior to situational factors as "the fundamental attribution error". Edward Jones (as cited in Tetlock, 1985) later named the same bias as the "overattribution effect". This overattribution effect has been tested and researched in many ways by many researchers. However, they have failed to fully explain why and how it occurs, thus leaving room for further testing of the overattribution effect.

Do people really make a mistake when attributing behavior to internal factors more than situational factors? Sabini, Siepmann, and Stein (2001) argue that attribution

theorists overgeneralize the effect by claiming "situational causes are more important than dispositional ones *in general*" (p. 3). Sabini, et. al. further assert that results of past fundamental attribution error experiments have an equal explanation that participants are over attributing the "influence of a particular internal cause . . . compared to the influence of another, equally internal cause" (p. 6). Likewise, Steve Clarke (2006) showed that the overattribution effect "is not an established result . . . Rather, it is one possible interpretation of experimental evidence" (p. 351).

Rachel Rogers (2007) conducted a study on the fundamental attribution error, finding that participants informed of a child having autism made more situational attributions, while participants not informed made more dispositional attributions. The present study was designed to replicate and expand upon Rogers' findings. The hypothesis for the present study was participants who were informed that the child in the clip was recently diagnosed with leukemia will attribute the child's behavior to situational factors, whereas participants not given any information about the child in the clip will attribute the child's behavior to things intrinsic of the child. This study differs from Rogers' study in that the information given about the child is that the child has recently been diagnosed with leukemia. This tests the overattribution effect when the situation of a fatal illness is evaluated. Using a fatal illness is different than the use of autism in Roger's (2007) study, in that leukemia is a fatal illness that develops during the child's life, not a disorder that the child is born with. This benefits participants in that they may become aware of their tendencies of attributional error and they may use this awareness to look more closely before making judgments about another person. This

would enable more of the general population to become aware and be more careful when making judgments of other people.

Method

Participants

There were 15 women and 17 men, ages 18-23 in this study. Each participant was recruited from the Lindenwood University Human Subject Pool and received extra credit points from their respective professors of anthropology, sociology, and psychology general education level courses. Only one of the 32 participants had children. Many current majors were stated by the participants. With five of the 32 participants, the most commonly stated major was biology.

Materials

The Lindenwood University psychology lab was used for this study. Each lab contained a desk, two chairs, and a computer. Many types of paperwork were used in the study. A recruitment description and participant sign up sheet (see Appendix A) was used for participants to schedule a 15 minute time slot. The experimenter's list of participants was given to the Human Subject Pool Office for each week participants were run. A participant's receipt was given to each participant for them to obtain their extra credit. An informed consent form (see Appendix B) was given to ensure participant's consent to participate in the study. Instructions one and two (see Appendix C) were used to distinguish between the two groups of uninformed and informed. In instructions one, participants were told what sequential actions they would be engaging in, including being told that they were going to be watching a video clip of an adult and child interaction. Instructions two included all of the same information as instructions one and added the

information that the child in the clip had recently been diagnosed with leukemia. A demographic questionnaire (see Appendix D) was used to find common background information about the participants. A feedback letter (see Appendix E) was used to explain the study and its use of deception, along with providing the researcher's contact information. Also, a video clip (http://www.youtube.com/watch?v=weMGpA8pH9A, 2007) was played on the Gateway E Series computer and heard through two Zero micro speakers and a Sony tape recorder, Basic cassette tape, and a Sony free standing microphone were used to record the interviews.

Procedure

First, participants saw the recruitment description and participant sign up sheet (see Appendix A) posted on the Human Subject Pool bulletin board and signed up there. Participants entered the psychology lab on Lindenwood University's campus in Young Hall room 105. The lab contained a desk, two chairs and a computer. Participants were greeted and asked to sit down t the desk and fill out information on the experimenter's list of participants and the participant's receipts. Then they were given two copies of the informed consent form (see Appendix B) to review, print their name at the top where indicated and sign at the bottom where indicated, giving one copy to the researcher and retaining the other copy for their records. Upon their signed consent, participants were given either instructions 1 or 2 (see Appendix C) and asked to read carefully. Half of the participants received instructions 1 and were not informed of any contextual information regarding the child in the clip. The other half of the participants received instructions 2 and were informed that the child in the clip had recently been diagnosed with leukemia. The version of the instructions each participant received was alternated for each subject,

where subject one received instructions 2, participant two received instructions 1, participant three received instructions 2, and so on. Once they had finished reading the instructions, they were given the demographic questionnaire (see Appendix D) and asked to complete. Prior to the participant receiving their copy of the demographic questionnaire, the researcher, based on the version of instructions the participant received and the order they came, printed a corresponding participant identification number in the upper right hand corner of the questionnaire.

After completing the questionnaire, the researcher clicked start on the computer to begin the video clip. Participants watched a video clip of a child refusing his mother's request to take a nap (http://www.youtube.com/watch?v=weMGpA8pH9A, 2007). The clip was a little over one minute long. Following the video clip, participants were interviewed (see Appendix F) about their thoughts regarding the child's behavior and the mother's behavior (questions adapted from Rogers, 2007). After each participant was asked the first six questions, a seventh hypothetical question was posed. Those in the informed group were asked of if they would have responded differently if they had not been informed that the child in the clip had recently been diagnosed with leukemia and those in the uninformed group where asked if being informed that the child in the clip had recently been diagnosed with leukemia would alter their resposes. During the interview the participants were audiotaped to ensure that the researcher accurately captured their responses. Later, the recorded interviews were played back and written down by the researcher. Then, the researcher and Rachel Rogers went through each response and coded each as either situational or dispositional. At the beginning of each interview, the researcher spoke the participant identification number, identified on the corresponding

survey, into the microphone to ensure accuracy. Finally, they were given a feedback letter (see Appendix E) and fully debriefed on the experiment. The researcher answered all of the participants' questions and thanked them for their time.

Results

The researcher ran three Phi-Square analyses and found no significance for any. The first was a Chi-Square test (see Appendix G) comparing the version of instructions (one or two) that the participants received and their answer (yes or no) to the question of whether they would change their responses if they had been given the opposite information than they received. The analysis resulted in $\chi^2_{(2)}=1.207$, $p>.05$ and found no significance. This showed the researcher that even if the participants had been given opposite information, their responses would not be affected by the opposite information. The second crosstab (see Appendix H) was between the version of instructions (one or two) that the participants received and their responses regarding their thoughts about the child's behavior (situational or dispositional). This analysis resulted with $\chi^2_{(1)}=.183$, $p>.05$ and found no significance. The researcher realized that regardless of being informed of key situational factors or not, participants still made more situational attributions. These results directly contrasted to the fundamental attribution error that would have predicted more dispositional attributions. The third Chi-Square test (see Appendix I) confirmed the same realization with results of $\chi^2_{(1)}=0$, $p>.05$ and no significance. This analysis compared the version of instructions (one or two) that each participant received and the factors they felt contributed to the child's behavior (situational or dispositional).

Discussion

The results were puzzling for the researcher because they go against the fundamental attribution error. The researcher thought this may be due to the fact that leukemia is a fatal illness with no social stigmatisms or behavioral implications like those associated with autism. The researcher was pleased to see that participants were making more situational attributions instead of snap judgments based on dispositional factors. Limitations in the study included too small of a sample, noise distractions in the psychology lab, indirect questions, and a short video clip. For future research, the researcher would remedy these limitations by increasing the sample size, eliminating noise distractions, asking more direct questions, and using a longer video clip.

References

Clarke, S. (2006). The fundamental attribution error and Harman's case against character traits. *South African Journal of Philosophy*, *25*(4), 350-368. Retrieved October 15, 2008, from Academic Search Premier Database.

Nice temper tantrum [Video file]. (2007, December 30). Video posted to http://www.youtube.com/watch?v=weMGpA8pH9A.

Pietromonaco, P., & Nisbett, R. (1982). Swimming upstream against the fundamental attribution error: Subjects' weak generalizations from the Darley and Batson study. *Social Behavior & Personality: An International Journal*, *10*(1), 1. Retrieved October 1, 2008, from Academic Search Premier Database.

Rogers, R. (2007). *Fundamental attribution error: Parent-child interaction judged by observers*. Unpublished manuscript. Lindenwood University, St. Charles, MO.

Sabini, J., Siepmann, M., & Stein, J. (2001). Target article: The really fundamental attribution error in social psychological research. *Psychological Inquiry*, *12*(1), 1-15. Retrieved October 1, 2008, from Academic Search Premier database.

Tetlock, P. (1985). Accountability: A social check on the fundamental attribution error. *Social Psychology Quarterly*, *48*(3), 227-236. Retrieved October 1, 2008, from Academic Search Premier database.

Appendix A

Recruitment Description

In this study you will be asked to fill out a short demographic questionnaire. Then you will view a video clip of an adult and child interaction. Following the video clip you will be interviewed on your thoughts regarding the video clip. The interview will be audiotaped to ensure the accuracy of your responses. All of this should take about 10-15 minutes of your time.

Sign-up Sheet B

Project #: _____

Experiment Name: _____

Place: _____

Class Date	Times	Name (please print)	Phone # or e-mail	Best time to be reached Professor	day/time	

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my basic demographic information (sex, age, major, etc.). Also, I understand that I will be watching a one minute video clip of a child interacting with an adult and that I will be interviewed following this clip. I understand that my interview answers will be audiotaped so that I can be sure to accurately code your responses. I understand that I should be able to complete this project within 10-15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses, both audiotaped and written, will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

Sally Eimer (636)724-6677

Supervisor: Dr. Michiko Nohara-LeClair Course Instructor (636)-949-4371 mnohara-leclair@lindenwood.edu

Appendix C

Instructions 1

First you will be asked to fill out a short demographic questionnaire. Then you will view a video clip of an adult and child interaction. Please be aware of what is taking place in the clip because I will be interviewing you about your thoughts on the video clip. The interview will be audiotaped to ensure the accuracy of your responses.

Instructions 2

First you will be asked to fill out a short demographic questionnaire. Then you will view a video clip of an adult interacting with a child recently diagnosed with leukemia. Please be aware of what is taking place in the clip because I will be interviewing you about your thoughts on the video clip. The interview will be audiotaped to ensure the accuracy of your responses.

Adapted from Rogers (2007).

Appendix D

Demographic Questionnaire

1. What is your current major? _____
2. Are you: Male or Female
3. Do you have any children? Yes or No
4. What is your current age? _____

Appendix E

Feedback Letter

Thank you for participating in my study. The interview was conducted in order to determine if people attribute behavior more to a person's disposition or to situational factors. There are two groups of participants watching this clip. However, half of the participants were led to believe the child in the clip had recently been diagnosed with leukemia. I predict that participants informed that the child, in the clip, was recently diagnosed with leukemia will attribute the child's behavior to situational factors, whereas participants not given any information about the child in the clip, will attribute the child's behavior to things intrinsic of the child. I feel this is important because people tend to make judgments about people too quickly. I hope that this study will show how easily it is to make an attributional error and try in the future to be more careful in their judgments of others. Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group, of which you are now a part of. No identifying information about you will be associated with any of the findings. If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Sally Eimer

Supervisor:Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix F

Interview Questions Script

Every participant will be asked the following questions regarding the clip. To ensure the accuracy of participants' responses, the interview will be audiotaped. Some questions may require further explanation for the participant for clarity.

1. Have you ever viewed this clip or part of this clip before?
2. What were your first thoughts during the viewing of the clip?
3. What do you think about the child's behavior?
4. What factors do you think contribute to the child's behavior?
5. What do you think the adult did well in this situation?
6. What do you think the adult could improve on?
7. Did you participate in a similar study that Rachel Rogers conducted last semester dealing with a mother and an autistic child?

Participants in the group who are not told "the child has recently been diagnosed with leukemia" will also be asked:

8. Do you think your responses would have been different if you had been told that the child in the clip had recently been diagnosed with leukemia?

Participant in the group who are told "the child has recently been diagnosed with leukemia" will also be asked:

8i. Do you think your responses would have been different is you had not been told that the child had recently been diagnosed with leukemia?

Questions adapted from Rogers (2007).

Appendix G

version * Change opinions based on opposite info Crosstabulation

			Change opinions based on opposite info			
			yes	no	unsure/maybe	Total
version	Not informed	Count	6	8	2	16
		% within version	37.5%	50.0%	12.5%	100.0%
		% within Change opinions based on opposite info	60.0%	42.1%	66.7%	50.0%
		% of Total	18.8%	25.0%	6.2%	50.0%
	informed	Count	4	11	1	16
		% within version	25.0%	68.8%	6.2%	100.0%
		% within Change opinions based on opposite info	40.0%	57.9%	33.3%	50.0%
		% of Total	12.5%	34.4%	3.1%	50.0%
	Total	Count	10	19	3	32
		% within version	31.2%	59.4%	9.4%	100.0%
		% within Change opinions based on opposite info	100.0%	100.0%	100.0%	100.0%
		% of Total	31.2%	59.4%	9.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.207[a]	2	.547
Likelihood Ratio	1.218	2	.544
Linear-by-Linear Association	.084	1	.771
N of Valid Cases	32		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.50.

Appendix H

version * thoughts about child's behavior Crosstab

			thoughts about child's behavior		
			Situational	Dispositional	Total
version	Not informed	Count	12	4	16
		% within version	75.0%	25.0%	100.0%
		% within thoughts about child's behavior	48.0%	57.1%	50.0%
		% of Total	37.5%	12.5%	50.0%
	informed	Count	13	3	16
		% within version	81.2%	18.8%	100.0%
		% within thoughts about child's behavior	52.0%	42.9%	50.0%
		% of Total	40.6%	9.4%	50.0%
	Total	Count	25	7	32
		% within version	78.1%	21.9%	100.0%
		% within thoughts about child's behavior	100.0%	100.0%	100.0%
		% of Total	78.1%	21.9%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.183[a]	1	.669		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.183	1	.669		
Fisher's Exact Test				1.000	.500
Linear-by-Linear Association	.177	1	.674		
N of Valid Cases	32				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

b. Computed only for a 2x2 table

Appendix I

version * factors contributing to child's behavior

Crosstab

			factors contributing to child's behavior		
			Situational	Dispositional	Total
version	Not informed	Count	15	1	16
		% within version	93.8%	6.2%	100.0%
		% within factors contributing to child's behavior	50.0%	50.0%	50.0%
		% of Total	46.9%	3.1%	50.0%
	informed	Count	15	1	16
		% within version	93.8%	6.2%	100.0%
		% within factors contributing to child's behavior	50.0%	50.0%	50.0%
		% of Total	46.9%	3.1%	50.0%
	Total	Count	30	2	32
		% within version	93.8%	6.2%	100.0%
		% within factors contributing to child's behavior	100.0%	100.0%	100.0%
		% of Total	93.8%	6.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[a]	1	1.000		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.000	1	1.000		
Fisher's Exact Test				1.000	.758
Linear-by-Linear Association	.000	1	1.000		
N of Valid Cases	32				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.00.

b. Computed only for a 2x2 table

Marketing and Social Consciouness

Red Bull Marketing Techniques

Jennifer Hogenmiller & Kailey Steuber

The differences in marketing techniques using the product Red Bull Energy Drink was investigated in this research project. Three techniques were used: the participant was read aloud information, the participant read information from a pamphlet, and the participant was shown a power point presentation. These techniques were tested to discover whether the marketing technique influenced the consumer purchase of the product. 64 participants were tested, but only 31 participants' data was used. Many participants' data had to be excluded due to factors of affiliation and missing data. After conducting a one-way ANOVA, we did find statistical significance between the presentation of different marketing techniques and a change in consumption. The power point method of marketing was the most effective.

An increasing amount of research has been conducted in order to understand the effects of variations in marketing techniques and strategies. Therefore, the question of interest for this study concerns how consumers respond to these different techniques. According to McGarry (1991), marketing in itself is a main part of a person's adaptive behavior in life. Marketing plays a role in our everyday ways of life, whether it is realized or not. In order to fully understand which strategies are most successful for the specific desired outcomes, much research still needs to be reviewed and tested. Many studies have been focused on the promotions and costs of products for consumers, but that is not the only essential element of marketing. This article searches for a technique to use that will be just as effective in an increase of sales as a cost reduction such as a

coupon or discount, without the means of adjusting prices. The main focus is on contactual relationships. This pertains to our study in that one of our main focuses is which method of marketing will be more effective using three different techniques. Each method contains a different level of contact between the participant and the experimenter. The product being used in this study is Red Bull Energy Drink.

Red Bull Energy Drink is a privately owned company that dominates the energy drink producers with 80 percent of the market. It is a non-alcoholic drink that is produced in Australia and distributed to over 100 countries world wide. The founder of the product is Dietrich Mateschitz, who currently owns 49 percent of the company. It was founded in 1987, and Hungary was the first country to launch the product in 1992 (Datamonitor, 2008). The products distributed by Red Bull are Red Bull Energy Drink and Red Bull Sugar Free. New to the year 2008 is Red Bull Simply Cola, but this product is not of concern in our study. The product is an energy drink that is targeted to consumers who need to feel alert, need an extra boost of energy, or are going to experience strenuous activity such as sports, long drives, or examines. It is said that the product increases metabolism, increases endurance, improves reaction speed, improves concentration, improves mental alertness, and improves stamina. The main ingredients in the product are taurine, glucoronolactone, caffeine, vitamins B6, B12, and carbohydrates. The sugar free version has aspartame and acesulfame K as their replacement for sugar. The ingredients in the products are not harmful when consumed at a moderate rate. However, in some countries, the product is only distributed through chemists for precautionary measures (Datamonitot, 2008).

In the article, *Competitive Promotional Strategies*, Narasimhan (1988) explains that consumers tend to be loyal to a specific brand of product, and that loyalty depends on two main factors. Those factors concern discounts and promotions. The type of promotions for the product can result in loyal consumers, and even switchers. The term switcher refers to a person who was once loyal to the competitor's brand and has now switched over to the brand of interest. This article shows us that the method of marketing for promotions is a very important aspect of a business that needs to be fully understood to acquire the most effective results.

A study on nonverbal memory tests was completed by Stacy & et. al (2004), and researched the effects of nonverbal tests and the ability to recall alcohol commercials. A total of 750 participants were surveyed in ways that did not require verbal feedback, but nonverbal sketches. The participants were asked to draw sketches of commercials they could recall from memory. The accuracy of how well the sketches actually reflected the commercial was systematically scored. This was of interest in our study because one of the methods we used was strictly verbal with no visual cues. If a commercial is an effective marketing technique, this means that the verbal method used in our experiment may not be as effective if it does not allow any visual cues to remember the brand or product. If nonverbal recall is strong for commercials, this means that the visual aspect of marketing could also be strong.

Rotfeld (2007) explains in an article that consumers should be knowledgeable on the products they are consuming. Too many companies do not want their consumers to know what their product is made of, for it is not considered healthy. When the consumer knows that the product being purchased and consumed is in fact healthy, it makes the

consumer more likely to further purchase the product. It is also stated that it is ethical for a company to explain the health issues of the product. The company needs to help the consumer know what he or she needs. In our study, the information we are providing for each participant consists of what our product is made of as well as the benefits it has to offer. This article helps us to prove that by supplying this information, in any form, should help increase sales and consumption, because our product is a healthy product in moderation. The health benefits are stated in each method of the experiment.

In another study conducted on energy drinks as a whole class, different factors were tested to determine if they affect consumption habits. These factors included jock identity, masculine norms, and risk-taking actions with gender differences in mind. A total of 795 undergraduate students were surveyed regarding these factors and their consumption habits for energy drinks at a public university. The study found that jock identity had a positive relationship with consumption. It did not find a difference in gender or masculine identity, however there was also a positive relationship between risk-taking behavior and consumption. This study shows us that not only are marketing techniques able to affect the outcome of our study, but so are other factors such as these and more (Miller, 2008). This is an important concept to consider.

According to an article from an online newspaper source, Chris Baggott, from Greenfield, Indiana, is the cofounder of an email software firm called ExactTarget. He believes that marketing via email is possibly the perfect technique to use. It is virtually inexpensive and the world practically revolves around email and internet. Email is considered one of the greatest and most revolutionary technique of marketing that most companies to not use or understand its potential (Wiley, 2007). In our experiment, we are

used email to conduct our follow up survey, which in turn is considered an advertising technique in itself.

In our study, we attempted to reveal if the presentation of different marketing techniques would influence a change in consumption of the product. We hypothesized that this presentation of the marketing techniques would change the consumption numbers. Also, the most effective marketing technique to increase sales for a specific product was analyzed. We used three different methods of informing participants about the product Red Bull Energy Drink. These methods consisted of verbally supplying the participants with information regarding the drink, giving the participants a pamphlet with the same information to have them read it, and supplying a power point presentation with the information. Each technique of informing the participant about the product was paired with an actual sample of the Red Bull Energy Drink or Red Bull Sugar Free depending on the participant's preference. The results of this study could be applied to many different aspects of life, including teaching techniques, assuming that the results reveal which method is most effective. The method that leads to the greater increase in product sales after the experiment is assumed to be the most effective in relaying information to a person in a manner that is very influential, meaning influential enough for the participant to purchase the product more than before the treatment was administered. Whether or not the different types of methods used for marketing techniques caused a change in the consumption of the product is the question of interest for this study.

Method

Participants

The participants used in this study were recruited from the Human Subject Pool at Lindenwood University. They were undergraduate students enrolled in a general education class of psychology, anthropology, or sociology. Also, some participants were recruited after making an announcement in their classroom with permission from the professor. The class was Behavior Modification and the professor was Tonie RinconGallardo. A can of Red Bull Energy Drink was offered as compensation in this class. There were a total of 64 participants, but 33 participants' data were excluded due to factors such as affiliation issues and missing data. Thirty-two were male and 32 were female ranging from ages 18 to 25.

Materials

The materials used in this study were pens and pencils for filling out the forms and questionnaire, a desk or table and chairs, paper, computer and printer to type up and print out the forms and questionnaires, the script, the pamphlet, and the power point as well as the computer for the power point, and Red Bull Energy Drink and Red Bull Sugar Free. The script, pamphlet, and power point contained information about Red Bull, including the ingredients, effects of the ingredients, and possible uses of the product. The ingredients mentioned were taurine, glucuronolactone, caffeine, and carbohydrates. It said that taurine and glucuronolactone help to get rid of metabolic by-products, and caffeine refreshes and stimulates metabolism. The uses were for high performance activity, driving, studying, partying, and being a mother (Red Bull Sampling Pamphlet, 2007). The forms consisted of two different informed consent forms, questionnaires, sign-in sheets, receipts for extra credit, email sheets, lists of ingredients, and feedback

letters. The first informed consent form asked for the participants to allow a brief initial questionnaire regarding information about age, sex, familiarity and affiliation with Red Bull or competitors, and Red Bull consumption habits. It also told the participant they could terminate the study at any time and asked if they were at least 18 years or older. The second informed consent form was similar, except that it asked for the participants email address as well as permission to email the follow-up questionnaire. The follow-up questionnaire asked if the participant believed the method of marketing used was effective and the number of cans consumed after the experiment. The sign-in sheets were for the HSP office, as well as the extra credit sheets for extra credit in an entry level psychology, sociology, or anthropology class. The email sheets were for the participants to fill in their email address if given permission through the second informed consent form. The list of ingredients included every ingredient in Red Bull Energy Drink and Red Bull Sugar Free. This was to ensure that no participant had any known allergies for any of the ingredients. Finally, the feedback letter was given to explain the purpose of our study and provide contact information for further interest of results. Also, 8.3 ounces of Red Bull and Red Bull Sugar Free were offered as compensation. These cans were supplied by Red Bull North America. The room in which most of the experiments took place was the Psychology Lab of the Young building, Room 105. The classroom in which the other participants were recruited was also in Young in Room 411. Each place had the appropriate lighting and a moderately comfortable atmosphere. However, the labs in Young, Room 105 was periodically noisy.

Procedure

Participants began our study by signing in and filling out the first set of informed consent forms (see Appendix A). The participant kept one informed consent form and the experimenter kept the other. HSP student participants received their extra credit slip at this time. Next, the participant filled out a brief questionnaire regarding their age, gender, familiarity with the product and affiliation with Red Bull or Red Bull competitors (see Appendix B). Then, participants were subject to one of the three different marketing techniques of similar length, about 3-5 minutes. In order to ensure equal sample sizes, each participant received a number with either a letter V, PP, or PA. Those who received the verbal techniques in which only the script was read to them had a V after their number. The letters PA were placed after the numbers of those participants who were asked to read a pamphlet containing the same information as the verbal script. Those who received a PP after their number watched a power point presentation on the same information as the verbal script and the pamphlet. The verbal method only included the experimenter reading the information. The pamphlet method included the experimenter handing the participant a pamphlet and asking them to read the pamphlet while sitting in the room. The power point method included the experimenter presenting a power point presentation on a lap top computer and reading out loud along with the slides. The information for the treatment techniques was identical, except in the way they were presented. This information consisted of the ingredients in Red Bull Energy Drink and the benefits it can provide. They were then asked for any questions concerning the study. Then each participant was given a second pair of informed consent forms asking for an email address and permission to email a follow-up questionnaire (see Appendix

D). If the participant agreed, they signed both informed consent forms, in which one copy was kept by the participant and the other by the experimenter. Then they wrote out their email address on the provided sheet (see Appendix G). At the end of the experiment for each of the treatment groups, an 8.3 ounce can of Red Bull or Red Bull Sugar Free was offered as a token of our appreciation to the participants. A complete list of ingredients was provided (see Appendix C) and each participant was asked to verify that they have no known allergies or illnesses due to any of the ingredients. Participants were then debriefed on the study and received a feedback letter explaining who they could contact for any further information or questions regarding this study (see Appendix E). Approximately one week after the study, the participant received the questionnaire via email. This questionnaire requested information regarding the number of cans of Red Bull consumed since the study took place as well as whether or not the participant's awareness of Red Bull has increased. (see Appendix F).

Results

We hypothesized that there would be a difference in the number of cans consumed between the initial experiment and the follow-up, based on the marketing technique used. An ANOVA was conducted using change in consumption as our dependent variable and the method of marketing as our independent variable. After analyzing the data of the one-way ANOVA, we found statistical significance with the F value of 0.672, critical value of 0.519, alpha level of 0.05, df(between) of 2 and the df(within) of 28, using N = 31. We excluded nine participants' data because they answered "yes" to the affiliation question in our initial questionnaire. We were forced to exclude data from 33 participants because they either failed to complete our follow-up e-

mail questionnaire or incorrectly answered the consumption question. The mean change in consumption for the verbal marketing technique was zero. The mean change in consumption for the pamphlet marketing technique was 0.55. Finally, the mean change in consumption for the power point presentation was 0.82. Table 1 displays the number of participants per method of marketing. Table 2 displays the results of the one-way ANOVA.

Table 1

Between-Subjects Factors

		Value Label	N
Method of Marketing	1	Verbal	9
	2	Pamphlet	11
	3	Power Point	11

Table 2

Tests of Between-Subjects Effects

Dependent Variable:Change in Consumption

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.378[a]	2	1.689	.672	.519
Intercept	6.348	1	6.348	2.526	.123
Method	3.378	2	1.689	.672	.519
Error	70.364	28	2.513		
Total	81.000	31			
Corrected Total	73.742	30			

a. R Squared = .046 (Adjusted R Squared = -.022)

Discussion

We found statistical significance and were, therefore, able to reject the null hypothesis. By rejecting the null hypothesis, our experiment suggests that a change in consumption depends on the application of a marketing method. Furthermore, certain methods of marketing seem to be more effective than others. The difference in effectiveness can be seen through the varying means found among the three methods of marketing used. The power point presentation method showed the most extreme change

in consumption, followed by the pamphlet method and lastly, the verbal method. Similar to the study done by McGarry (1991), the level of contact between the participant and experimenter seemed to play a part in the effectiveness of the marketing technique. However, in our study, contact seemed to have an inverse relationship with the effectiveness of the marketing technique. We believe the verbal method to utilize the most amount of contact because it is merely a one-on-one encounter with no visual aid. In our experiment, the verbal method created absolutely no change in consumption. Also, in comparison to the Rotfeld (2007) study, educating our participants about the product itself increased the overall change in product consumption. Additionally, Stacy, Pearce, Zogg & Dent (2004) found that participants could accurately recall commercials when asked to sketch them. This relates to our study because our power point presentation method closely resembled a commercial. Also, the power point presentation method was the most effective method in increasing participants' product consumption.

There were several limitations found in our study. First, the amount of time it took for our experiment to be approved by the appropriate people with Red Bull North America was much lengthier than predicted. Also, participants tended not to show up at their designated times. We also found that one of the questions on our initial questionnaire was unclear. It asked the participant about their previous or current affiliation with Red Bull or any of its competitors. Participants often misinterpreted the word affiliation. When attempting to email the participants the follow-up questionnaire, some of the participants handwriting was difficult to decipher in regards to the email address they were asked to provide. Furthermore, many participants chose not to complete this follow-up questionnaire or they answered the questions incorrectly. There

was also a confounding variable within our study. This occurred when we conducted our experiment on an entire class using strictly the pamphlet method of marketing. This was not done for any other method, and therefore, could have affected our overall results. The room in Young where the Psychology Lab is, Room 105, is periodically very noisy and could interfere with the results of the study in several ways. It could interfere with the participants' concentration or whether or not the participant could hear the experimenter when speaking. This is especially important for the verbal method because all the participants in this group were only presented the information verbally, so any interference could have been a much more severe problem than for the groups who also had the information in sight as well. Also, one experimenter only administered the verbal group, but both experimenters administered pamphlet group and power point group. This also could have been a confounding variable because of the way the experimenters presented themselves and their reading performance.

These problems could be accounted for by, first, clarifying the word "affiliation" in our initial survey. Next, the follow-up questionnaire needs to specify the need for a numerical value in regards to the cans consumed following the experiment. Finally, the experimenters should be in charge of writing down the participant emails to ensure legibility and the room needs to be more quiet in ensure complete concentration.

References

McGarry, E. (1991). The contactual function in marketing. *The Journal of Business of the University of Chicago, 24,* 96-113.

Miller, Kathleen E. (2008). Wired: Energy drinks, jock identity, masculine norms, and risk taking. *Journal of American College Health, 56,* 481-489.

Narasimhan, C. (1988). Competitive promotional strategies. *The Journal of Business, 61,* 427-449.

Red Bull GmbH (2008). Datamonitor Company Profiles Authority. Retrieved from Business Search Premier through EBSCOhost, from www.datamonitor.com.

Red Bull Sampling Pamphlet (2007). If you want to stay on top of things in this 24/7 world, you'll need to get some wings. *Red Bull North America, Inc.*

Rotfeld, Herbert Jack. (2007) Mistaking a marketing perspective for ethical analysis: when consumers can't know that they should want. *The Journal of Consumer Marketing, 24,* 383.

Stacy, Alan W., Pearce, Steve G., Zogg, Jennifer B., & Dent, Clyde W. (2004). A nonverbal test of naturalistic memory for alcohol commercials. *Psychology & Marketing, 21,* 295-322.

Wiley, John, and Sons Ltd. (2007). Discover the e-mail marketing tactics used by some of the biggest and most successful companies. Retrieved on Novermber 28, 2008 from Newspaper Source database.

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my Red Bull consumption and affiliation. To the best of my knowledge, I do not have any allergies toward Red Bull Energy Drink or Red Bull Sugar Free or any additives that may be part of Red Bull Energy Drink or Red Bull Sugar Free as stated in the list of ingredients. I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor

Appendix B

Participant # _____

Questionnaire

1. Please specify your gender.

   Male Female

2. How old are you? _____

3. Are you currently or have you previously been affiliated with Red Bull or any Red Bull competitors such as Coca-Cola, Pepsi or Anheuser Busch?

   Yes No

4. Are you familiar with Red Bull products?

   Yes No

5. Approximately how many cans of Red Bull Energy Drink or Red Bull Sugar Free do you consume in a week? _____

Appendix C

List of ingredients for Red Bull:
carbonated water
sucrose
glucose
sodium citrate
taurine
glucuronolactone
caffeine
inositol
niacinamide
calcium pantothenate
pyridoxine HCl
vitamin B12
natural and artificial flavors
colors

List of Ingredients for Red Bull Sugar Free:
carbonated water
sodium citrate
taurine
glucuronolactone caffeine
acesulfame K
aspartame
inositol
xanthan gum
niacinamide
calcium panthothenate
pyridoxine HCl
vitamin B12
natural and artificial flavors
colors

Appendix D

Follow-Up Informed Consent Form

I, _____ (print name), understand that I will be partaking in a research project that asks me to complete a short questionnaire via email about my Red Bull consumption and awareness. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

Jennifer Hogenmiller (314) 603-2291

Kailey Steuber (314) 452-6099

Supervisor:

Dr. Michiko Nohara-LeClair

Course Instructor

(636) 949-4371

mnohara-leclair@lindenwood.edu

Appendix E

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine people's current consumption and affiliation with Red Bull. The information provided was a method of marketing that we are testing. Three different methods are being used in this study. The first method is verbally teaching the participant about Red Bull products. The second is the participant is given a pamphlet to read. The third is the participant is shown a power point presentation. One of these three methods was used in your study. This is being done to show that there is a difference in the consumption and purchasing of Red Bull products after the different marketing techniques are used. The follow-up email survey is used to determine the current consumption and purchasing of Red Bull after the experiment.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:

Kailey Steuber

Jennifer Hogenmiller

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 mnohara-leclair@lindenwood.edu

Appendix F

Participant # _____

Follow-Up E-Mail Questionnaire

1. Since your participation in the experiment, approximately how many cans of the product have you consumed? _____
2. Do you believe that the marketing technique used during your participation in the experiment was effective in increasing your general knowledge and awareness of Red Bull products?

   Yes No

Appendix G

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Participant # _____ Date _____

Participant e-mail _____

Author Note

Jennifer Hogenmiller, Department of Psychology, Lindenwood University; Kailey Steuber, Department of Psychology, Lindenwood University.

Jennifer and Kailey would like to acknowledge Dr. Nohara-LeClair for support and active participation in our study, Dacia Meyer and Red Bull North America for allowing this study to be conducted and for providing various materials and to all of the volunteers who kindly participated in our study.

Correspondence concerning this study should be addressed to Jennifer Hogenmiller, Department of Psychology, Lindenwood University, St. Charles, Missouri 63301. E-mail: jennhogenmiller@gmail.com or Kailey Steuber, Department of Psychology, Lindenwood University, St. Charles, Missouri 63301. E-mail: krsteuber@aol.com.

Is Bigger Better or is Less More? :
American Compared to Non-American Consumption Habits

Amanda Bratcher, Sofia Aneas, & Jesus Lopez

The purpose of this experiment was to determine if American participants compared to non-Americans participants would choose a bigger consumable item regardless of its cost when asked to choose between a smaller and larger item. Participants were shown a series of items that consisted of five pairings of two different-sized consumable items and asked to state their preference after each set of items was presented. This process was administered one time with pricing information of the items made known to the participants and one time without pricing information, counterbalancing of pricing information was utilized. The results concluded that price did in fact have an effect on American participant's choices; however, overall non-Americans made more large choices than Americans.

The purpose of this experiment was to examine the consumption habits of Americans compared to the consumption habits of Non-Americans. The reason for choosing this experiment was to investigate the influence of American culture. Hellofs (1995) suggested that there is a sense that bigger is better in America, and that believing the more you have of something the better it is. The experimenters believe that a culture saturated with plus size value meals and all you can eat buffets instill within its citizens the notion that the larger something is the better it must be. In cultures outside of America, people are used to standard sizes and are more conservative in how they spend their money. For example, getting a supersized meal in Honduras means a significant

raise in the cost of the meal and a portion of food larger than most people could eat (J. Lopez, personal communication, September 5, 2008).

We believed that American participants would choose the bigger consumable item regardless of cost to them because they have been immersed in a culture where more of something has a larger appeal than the fact it costs more money (Zukin & Maguire, 2004). The experimenters believed that participants of non-American background, not born and raised in the United States, would be more conservative in their choices and would choose the smaller options compared to the American participants. We hoped that an objective look at the choices people make in regards to the size of things they choose will help them be more consciously deliberate in their choices. Experimenters believed that although there is much diversity in cultural values with respect to size, the bigger is better attitude is unique to the American culture.

Morgan Spurlock (2004) conducted an experiment for his documentary "Supersize Me" where he, as the participant, would conform as much as he could to American society and their fast food consumption habits. The participant was a 32 year old man in good physical condition and practices healthy eating habits. The experiment involved the participant in consuming all three meals of the day from McDonalds for 30 days. In addition to this, the participant would always agree to "super size" his meal if offered by the cashier at McDonald's. The participant was to stick in a strict manner to this diet; no exercise, food from different sources, or skipping a meal. The main reason for this was to follow the stereotyped American citizen who eats fast food most of the time and has little or no exercise habits and find out how much damage is being done to the person physically and health wise. Morgan Spurlock gained 24.5 pounds in a 30 day

period. His cholesterol went up 65 points, reaching 230 as well as his body fat increasing from 11 percent to 18 percent. He increased his chances of coronary heart disease and heart failure times two, and suffered of depression, mood swings, exhaustion, lack of sex drive, and a craving for the fast food according to three medical doctors.

Kopelman (2005) states that because the obesity rates in the United States, especially in children, are rising at an alarming rate; obesity now needs to be considered a primary concern for everyone. According to Hendrick (2008) diseases such as diabetes, high blood pressure and cardiovascular disease which are more commonly found in adults are beginning to appear more often in children. This concern is gaining much attention especially because research shows obesity to be a lifelong problem and its treatment is not as simple as taking medicine or following a simple diet. According to Boyles (2008) implementing treatments to reduce obesity are easier to achieve at a younger age than in adulthood. For this reason, issues such as cultural influences from an individual's childhood should be closely looked. It takes more than a school district deciding to remove soda machines from school campuses or parents sending their kid to fat camp to combat these weighty issues. If instead we can find a way as a society to instill healthier decision making values in our children in even the subtlest of ways we will in turn find ourselves with healthier children in future generations.

Method

Participants

One hundred participants consisting of 60 women and 40 men took part in this study. All participants were recruited through the Human Subject Pool. All the participants attended school at Lindenwood University and were offered bonus points for

their participation in their Psychology 100, Psychology 101, Sociology 102, Sociology 214 or Anthropology 112 class.

Materials and Procedure

A questionnaire including demographic information was used. The demographic questionnaire included questions about where the participants grew up, their exercise frequency, their hunger level at the time of the experiment, and whether or not money was a contributing factor in their consumption habits (see Appendix A). We gathered or created the materials needed for the experiment. Perishable consumable items were purchased the day of the experiment so they would not spoil. This study also used pens, 3"x 5" index cards with the prices of items printed on them, two chairs, and a table to sit at. The day before the experiment, we called each participant to remind them of their sign-up time. When participants arrived to Young 105, they were asked to sign the experimenters' list of participants, fill out participant receipts, the list of participants, two consent forms (see Appendix B), one for the experimenter and one for the participant to keep, and then verbally instructed about the experiment. Once the participants felt they understood the verbal instructions, we proceeded with the experiment. Next, the experimenters briefly explained that they would be shown the actual item series that consisted of five pairings of two different sized consumable items. Experimenters used a notebook, pen, and pencil to record the results.

The first set of items were a small and a large double-quarter pounder value meal from McDonald's in which the small value meal had a regular size burger with small fries and a 24 oz drink and the large value meal had a regular size burger with large fries and a 32 oz drink; the second set of items were a 12 oz cup and 20 oz cup from

Starbucks, the third set of items were a large five oz and small 2.5 oz bag of potato chips, the fourth set of items were a 23.4 oz large and 16.9 oz small water bottles, and the fifth set of items were a 12 inch and a six inch subway sandwich.

Participants were then asked to state their preference after each set of items was presented. The first participant was asked to state their preference assuming the cost between items was the same and then was informed of the real-life prices of the items and asked again to state their preference as each set of items was presented a second time. The second participant was informed at the beginning of the series of the real-life prices and asked to state their preference. The second time through the items the participant was asked to choose assuming the cost between items was the same. We continued this pattern of counterbalancing the pricing information in our presentation of items to the participants through our experiment with the hope that a within-subject design would prove more statistically powerful in its capability to detect any effects of the independent variable.

Participants were asked to assume responsibility for any extra costs if they choose the larger item. After the sets of items were completed participants were given a short questionnaire asking them about their nationality, how long they had lived in the United States of America, exercise habits (it could be possible that a person that exercises regularly needs to consume more food or drink on daily basis than a person that does not exercise), gender, how hungry they were, and if money was a factor in their food or drink size selections. Participants were verbally debriefed and asked if they had any questions. They were then given a feedback letter (see Appendix C for feedback letter) which explained the purpose of the study, and contact information of the experimenters, in case

the participant had future questions or was interested in the results of the completed study.

Results

We hypothesized that American participant's compared to non-American participants would choose the bigger item regardless of cost. We conducted a mix analysis of variance (ANOVA); our independent variables were the participant's origin and cost of items. The dependant variable was the participant's choice.

The results of this study using a 2(origin) X 2(cost) mixed analysis of variance (ANOVA) revealed no significant interaction that showed American participants would choose the bigger consumable item regardless of cost, $F(1, 98) = .410$, $p > .05$. We did find significant findings in regard to the main effects of cost, $F(1, 98) = 40.824$, $p < .05$, and origin, $F(1, 98)$ $p < .05$.This means the participants origin did influence the participant's choice of items as well as the cost of the item influencing participant's selection of a larger or smaller item.

Discussion

Although we did not find significant interaction in our study, we did find significant interaction inversely to our original hypothesis. This means that non-American participants did actually choose larger items regardless of cost. The experimenters discussed this and found relevant information that attributed to the obtained results. Berk (2008) stated, "Parents pressure their children to eat, a practice common among immigrant parents and grandparents, who as children themselves lived through deadly famines or periods of food deprivation due to poverty" (p. 418). Many of the non-American participants were from developing countries, implying an

economically poor culture. Therefore, choosing a larger item seems more profitable considering the item is larger and would be more fulfilling. This perception of poverty-stricken culture contradicts the experimenter's initial belief that because their origin is such culture, their size selection would be small. According to McCracken (2005), characteristics of this culture include not taking for granted free items and a concept of better full than hungry. It was more common for an American participant to justify his small selection because of their inability to finish the whole product whereas non-Americans were already considering saving it for later especially if the item was free.

The experimenters believe there are a few contributing factors of why they were unable to prove their hypothesis. First, all 100 participants in the study were Lindenwood University students. The reason this is a strong factor to be considered is because the data retrieved from the experiment suggested money was an influence in their choice of items (See Table 4). Based on information from Liechty, Freeman & Zabriskie (2006), the experimenters also believed that because all participants were students, they were overly concerned about what the experimenters might think about them if they made a perceived unhealthy choice. An example that lead us to reach this conclusion is the fact that when conducting the experiment more than a few participants asked if they had to choose one of the items of McDonald's because they had no interest in consuming it. Another factor the experimenters thought would be worth considering is the hesitant action several female participants showed when choosing between the larger and smaller item in the presence of the male experimenter. This lead the participants to have an inclination in choosing smaller items which directly affected results of men vs. women, where men would have no objection to choosing the larger items.

Another possible contributing factor is the possibility of participants not being able to follow instructions correctly. Instructions were verbally given to participants; this could have affected participants understanding of the instructions and the apparent ease of the experiment itself neglected their need of asking any questions. A few participants showed confusion when going through the experiment a second time, while others unexpectedly chose smaller items when there was no cost and larger items when there was a cost. However, the experimenters also contemplated this to be somewhat of a humble characteristic of the participant: choose the smaller item because it's "free".

The experimenters also conducted an independent t-test to compare the difference between male and female choice of items. The results of an independent t-test adjusting for the degrees of freedom to account for heterogeneity of variance in the two samples showed that men chose bigger items overall than women did, $t(67.637) = 4.012$, $p < .05$. In light of this important data, the experimenters believe that the high percentage of American women that participated in the experiment (71%) highly influenced the original experiment, as well as the 65% of non-American participants.

Although the original research hypothesis of the experimenters was not proven, it is important to note that the experiment did lead to results that lend significant insight into the different consumption habits people from varying cultures have according to the environment they live in. The fascinating information gathered that non-Americans seemed to fit the profile of the "bigger is better" culture suggests further research would be constructive and informative. Are these results the product of non-Americans living in this critically acclaimed culture or are there other underlying components to these perplexing results that are awaiting investigation? Research that explicitly focuses on

non-American participants, and takes into account their depth of immersion into American culture and possibly amount of time here could possibly provide insight into this area.

References

Berk, L.E. (2008). *Infants and Children (6th Ed).* Illinois, IL: Pearson Education Inc.

Boyles, S. (2008, Aug.5**).** *Kids & Cholesterol: Call for Early Action*. Retrieved November 23, 2008, from Web MD Web site: http://www.webmd.com/cholesterol-management/news/20080805/kids-cholesterol-call-for-early-action.

Hellofs, L.L. (1995). *Market share and customers' perceptions of quality: Is bigger better?* (Doctoral dissertation, University of Washington, 1995)

Hendricks, B. (2008, Nov. 3). *More Kids Taking Medication; Obesity Blamed.* Retrieved November 23, 2008, from Web MD Web site: http://www.webmd.com/parenting/news/20081103/more-kids-taking-medication-obesity-blamed

Kopelman, P.G. (2005). *Clinical obesity in adults and children: In adults and children*. Oxford: Blackwell Publishing.

Liechty, T., Freeman, P., & Zabriskie, R. (2006, July). Body image and beliefs about appearance: Constraints on the leisure of college-age and middle-age women. *Leisure Sciences*, *28*(4), 311-330.

McCracken, G. (2005). *Culture and Consumption II*. Bloomington, IN: Indiana University Press.

Spurlock, M. (Producer), Spurlock, M. (Director), 2008 *Super Size Me* [Motion Picture]. United States: Showtime Networks Inc.

Zukin S., & Maguire J.(2004). Consumers and consumption. *Annual Review of Sociology*, 30, 173-197.

Author Note

Sofia Aneas, Amanda E. Bratcher and Jesus A. Lopez, Department of Psychology, Lindenwood University. We thank Dr. Ray Scupin for his collaboration and guidance with our research material. We thank the Psychology staff at Lindenwood University for their ongoing encouragement in helping us reach our goals.

Last but not least, we thank Dr. Michiko Nohara-LeClair for her tireless effort in providing feedback and leadership in our endeavors.

Correspondence concerning this article should be addressed to Amanda Bratcher, 1220 Park Ashwood Dr., Saint Charles Missouri, 63304.

Appendix A

QUESTIONNAIRE

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1) Are you MALE FEMALE?

2) Were you raised in America? YES NO

If no, how long have you lived here?

1 day-1year 1year-2yrs 2yrs-3yrs 3yrs-4yrs 4yrs-5+

3) Are you AMERICAN NON-AMERICAN?

4) How many hours a week do you exercise?

0 hours 1-6 hours 6-12 hours 13+ hours

5) How hungry are you right now?

NOT HUNGRY HUNGRY VERY HUNGRY

6) Is money a factor in your consumption habits? YES NO

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my nationality, how long I have lived in America, exercise habits, gender, and financial availability. To the best of my knowledge, I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

Sofia Aneas 636.541.8669
sofianeas@hotmail.com

Amanda Bratcher 636.577.1961
mambo217@yahoo.com

Jesus Lopez 636.219.2405
jesuslopezc@gmail.com

Supervisor:

Dr. Nohara-LeClair
Course Instructor
(636)-949-4371
mnohara-leclair@lindenwood.edu

Appendix C

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to obtain information about people's nationality, how long they have lived in America, their exercise habits, gender, and financial availability. The experiment was conducted to determine if American participants, compared to non-Americans, would choose the larger item when given a choice between two.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of consumers, of which you are now a part. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:
Sofia Aneas 636.541.8669 sofianeas@hotmail.com
Amanda Bratcher 636.577.1961 mambo217@yahoo.com
Jesus Lopez 636.219.2405 jesuslopezc@gmail.com

Supervisor:
Dr. Nohara-LeClair 636-949-4371 mnohara-leclair@lindenwood.edu

Appendix D

Recruitment Description

Description:

In this study, you will be presented with 5 sets of different consumable items and asked to state your preference. Then, you will be given a short questionnaire designed to assess information of your race, how long you have lived in the United States of America, exercise habits, gender, how hungry you are and if money is a factor in your food or drinks size selections. The entire procedure should take no more than 15 minutes of your time.

Campus Life & Cognitive Performance

How Lindenwood Students Get to Class:

A Study of Driving Versus Walking

Sara Ohlms

The purpose of this study was to determine if there is a lack of parking at Lindenwood University (LU), and if that problem could be solved if more students who currently drive to class would walk instead. Research shows that college students in America are not getting enough exercise, and that walking has many health benefits. Data were collected using a survey with 40 LU students. Data were also collected through observations of the parking lots on campus. The results show that there are always empty parking spots on campus, 67.5% of participants believe that there is not enough parking on campus, 72.5% agree that more students should walk to class, and that 75% of participants who live in LU owned houses drive to class.

Many students who go to school on the St. Charles campus of Lindenwood University (LU) feel that there is not enough parking space for all of the students who have to park their cars on campus. It is very common to have a teacher or student walk in to a class late, and say that they were looking for a parking spot. Many students drive to class from the girls' and boys' neighborhoods that are owned by LU, which are located on the edge of campus. To walk to class from one of these houses takes from 10 to 20 minutes.

Walking to class can be very beneficial to a student's health. Current research says that only 33% of the American adult population gets the recommended amount of physical activity (Sisson, McClain, & Tudor-Locke, 2008). At one Midwestern

university, only 30% of the students met the recommendations (Sisson, et al.). This means that it is not just old people that are not getting enough exercise, it is young college aged men and women, like the ones that choose to drive to class rather than walk.

Walking is good for a person's health. This is common sense. Any physical activity is better than none. Even walking in small amounts can benefit a person's health. Studies have shown that walking 30 minutes a day can increase a person's health (Barker, 2007). Even if the walk is broken up into two 15 minute sessions, the benefits are the same (Barker). Walking at a faster pace can increase the health benefits gained from walking (Barker). The students at LU can increase their health just by walking to class instead of driving.

The specific health benefits of walking are well-established. Studies have shown that just 30 minutes of walking a day can cause weight loss, reduce the risk of heart disease by half, strengthen bones by increasing bone density, and retain mobility into old age (Lee, 2008). In one study, women who walked briskly for 45 minutes per day, five days per week had half as many colds as women who did not walk, along with an increase in the cells that protect against bacteria and viruses (Shideler, 2006). Walking can reduce stress, improve sleep, and reduce symptoms of depression (Getting Fit, 2008). If students at LU walk to class instead of driving, they will gain all of these physical and mental benefits.

One factor that influences whether college students walk or drive to class is campus walkability (Sisson, et al., 2008). The walkability of a campus is the measure of how easy and safe it is for a person to walk on the campus. The Walking Suitability Assessment uses information about the average amount of traffic, speed limit, presence

and condition of sidewalks and crosswalks, and number of traffic lanes to generate a score of how walkable the specific stretch of road is (Emery, J. & Crump, C., as cited in *Making your Community*, 2002). One study compared two college campuses that had different levels of walkability. One campus had no traffic allowed on the campus, and parking was only on the edges of campus. The other campus had streets for cars going through it, and parking around each building (Sisson). The second campus was rated as "fair" for walkability, while the first was rated as "very good" (Sisson). The results found a strong positive relationship between campus walkability and amount of walking done by students (Sisson). The more conducive a campus is to walking, the more the students will walk to class instead of drive.

The purpose of this study is to find out how many of the students who live on campus drive to class, to determine the peak hour for students on campus, to see if there is ever a time when all of the parking spaces are full, to figure out the most common reasons that people drive or walk to class, and to know the students' attitudes about the current amount of parking available on campus. The hypothesis was that the lack of parking at LU, whether real or perceived, would be fixed if more students walked to class instead of drove.

Method

Participants

The participants taking part in this study were 40 students at Lindenwood University (LU), with an age range of 17 to 29, and a mean age of 20.225 (s.d.= 2.44). The class breakdown was 40% freshmen, 35% sophomores, 12.5% juniors, and 12.5% seniors. The participants were recruited through the LU Human Subject Pool (see

Appendix A). These participants received extra credit in their introductory level psychology, sociology, or anthropology class for their contribution.

Materials

The study consisted of a survey (see Appendix B), which asked questions about the students' demographic information, how they usually got to class, questions about parking behaviors or questions about the walk to class, and questions about the participants' attitudes about the current amount of parking at LU. The study took place in room 105 in Young Hall, which has adequate lighting, a desk, and three chairs. The participants were given two copies of the informed consent form (see Appendix D), with instructions to fill one out for the researcher, and to keep the other one for their records. After the study, the participants received a feedback letter containing contact information of the experimenter (see Appendix C), and a participant receipt to take to the Human Subject Pool office so that they could receive their extra credit.

Procedure

The sign up sheet and study description were posted on the Human Subject Pool bulletin board located on the fourth floor of Young Hall at LU. Participants signed up for specific times at which to take the survey. At the times for which they signed up, participants came to room 105. They were welcomed and asked to sit at the desk and sign in. They were then given two copies of the informed consent form, with instructions to fill one out for the researcher, and to keep the other one for their records. After completion, the participants received a copy of the survey, with instructions to ask questions if they had trouble understanding any part of the survey. The survey was laid out on the desk in front of the participants, each page in its own pile. I gave each

participant a copy of the page 1. The last question on page 1 instructed the participant to take page 2A if they usually drove to class, 2B if they usually walked, and page 3 if they carpooled or got to school another way (see Appendix B). If they drove and walked equally, they were verbally instructed to take both page 2A and 2B. After they had completed page 2, they took page 3. After the participants had completed the survey, they were given a feedback letter so that they can inquire about the results of the study. They were also given a receipt to take to the Human Subject Pool office so that they could receive the extra credit in their introductory level psychology, sociology, or anthropology class. They were then debriefed, being told the hypothesis of the study and the purpose. They were then thanked for their time and were free to leave.

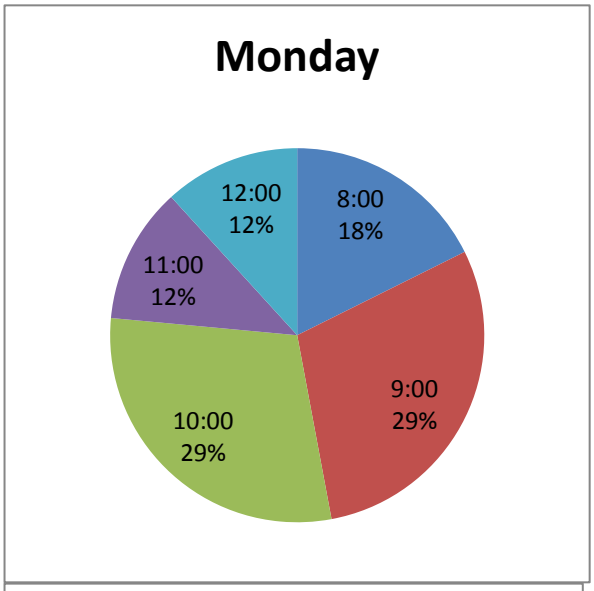
In addition to the survey, observations were made of the parking lots on the LU campus on various days, at multiple times throughout the day. These observations were made between the hours of 8:00 a.m. to 3:00 p.m., with most observations being made on Mondays, Wednesdays, and Fridays between 9:00 a.m. and 12:00 p.m. The lots that were observed the most were the large lot by the Spellman Center in front of Irwin Hall, the lot by Harmon Hall, and all of the other parking areas on the campus. Being observed was the number of empty parking spaces at specific times, as well as the number of cars parked illegally.

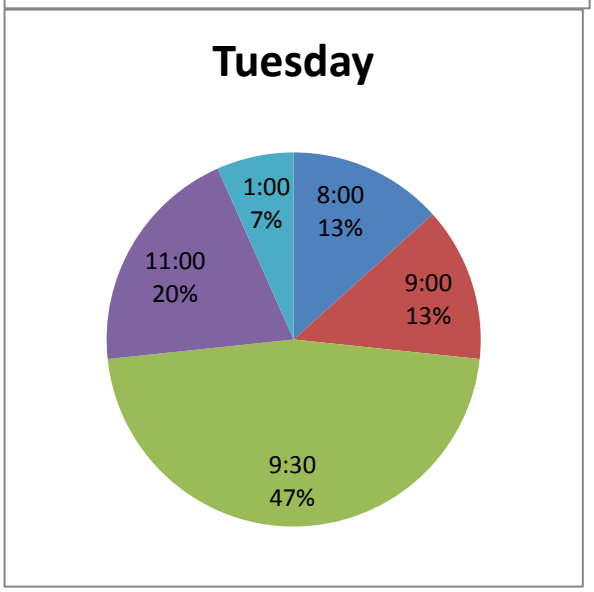
Results

Of the 40 participants, 16 participants (40%) reported driving to class, 22 participants (55%) reported walking or riding a bike to class, one participant (2.5%) reported riding in a carpool, and one participant (2.5%) reported driving and walking equally. The results of the survey show that 100% of participants who live off campus

drive to class, 100% of students who live in the dorms walk to class, with the exception of one participant who drives and walks to class equally, and that 75% of the students who live in LU-owned houses drive to class.

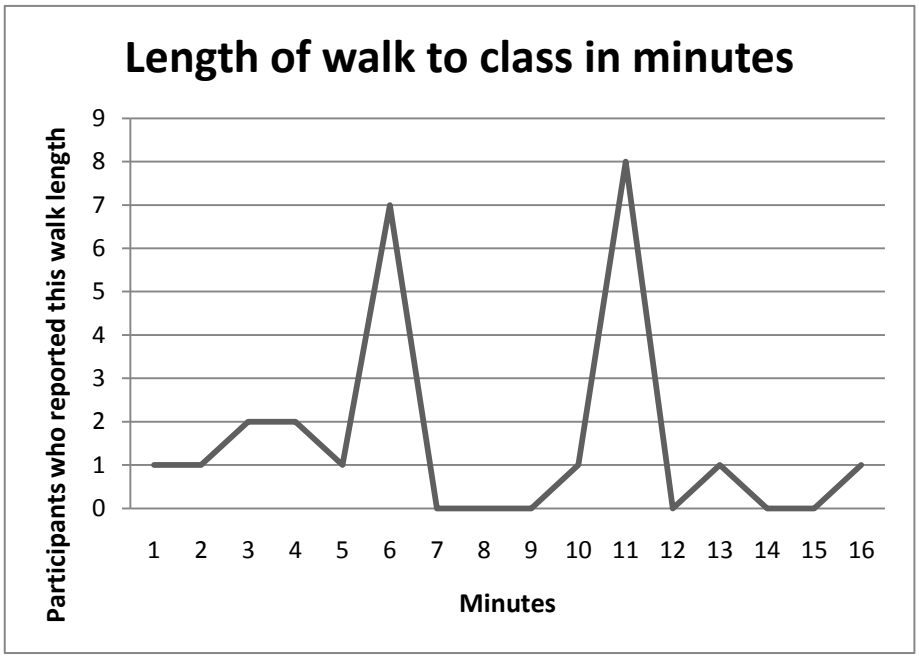
On Monday the time at which most participants who drive have their first class is both 9:00 a.m. and 10:00 a.m., with ten participants (58%) who drive to class reporting one of those times. The most common time on Tuesday is 9:30 a.m., with nine participants (47%).

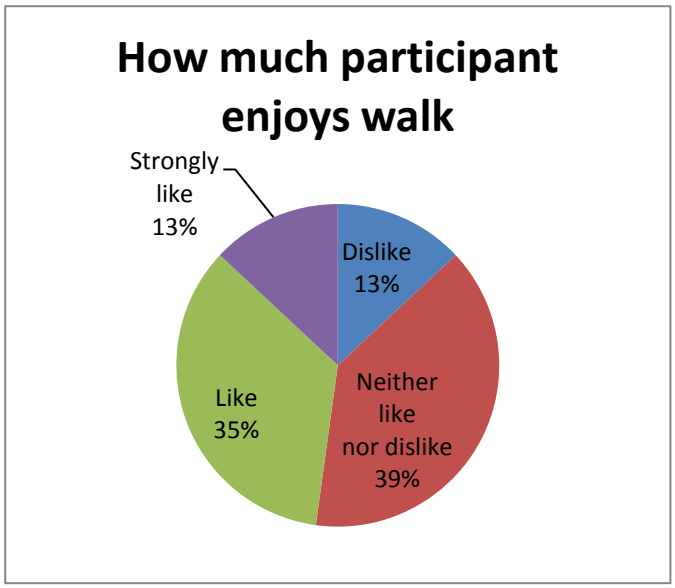




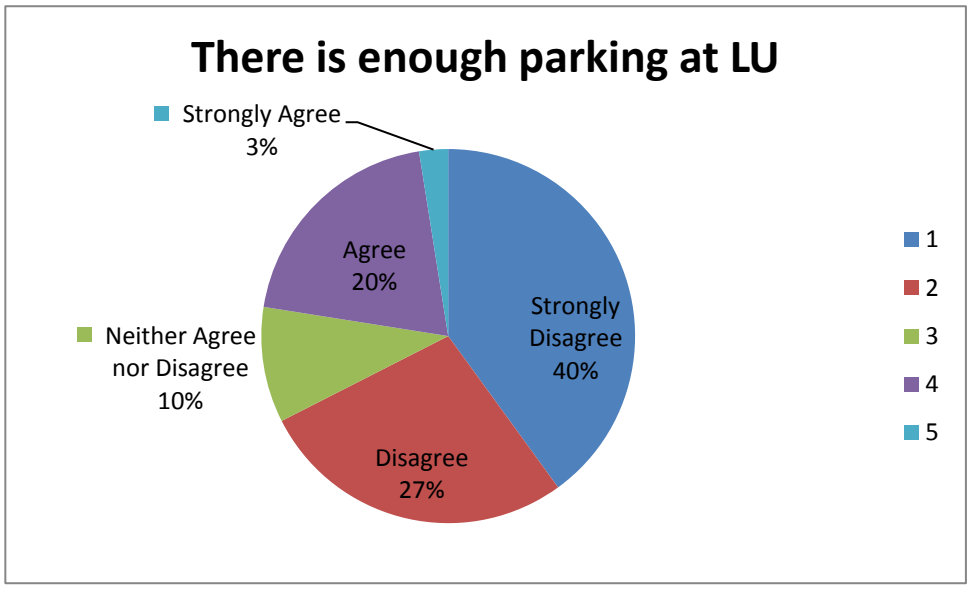
When asked if the participant usually had trouble finding a parking spot, nine (52.9%) said yes, and eight (47.1%) said no. When asked where the participant begins his or her search for a spot, seven (41.2%) said that they started close to the building in which they had class, five (29.4%) said that they started farther away where they were more likely to get a spot, and five (29.4%) said that it depends. When asked if he or she would park illegally, six (35.3%) said yes, with eleven (64.7%) saying no. Two participants who drive to class, or 17.6%, have walked from where they live, with one reporting a walktime of 10 minutes, and the other 15 minutes.

The average walktime for participants who walk to class is 7 minutes, with a range of 1 minute to 15 minutes. When asked how much they enjoyed the walk to campus, three (13%) dislike it, nine (39.1%) neither like nor dislike it, and eleven (47.8%) either like or strongly like it. Of the participants who walk to class and do not have a car, four out of the twelve (33.3%) would drive if they had a car.



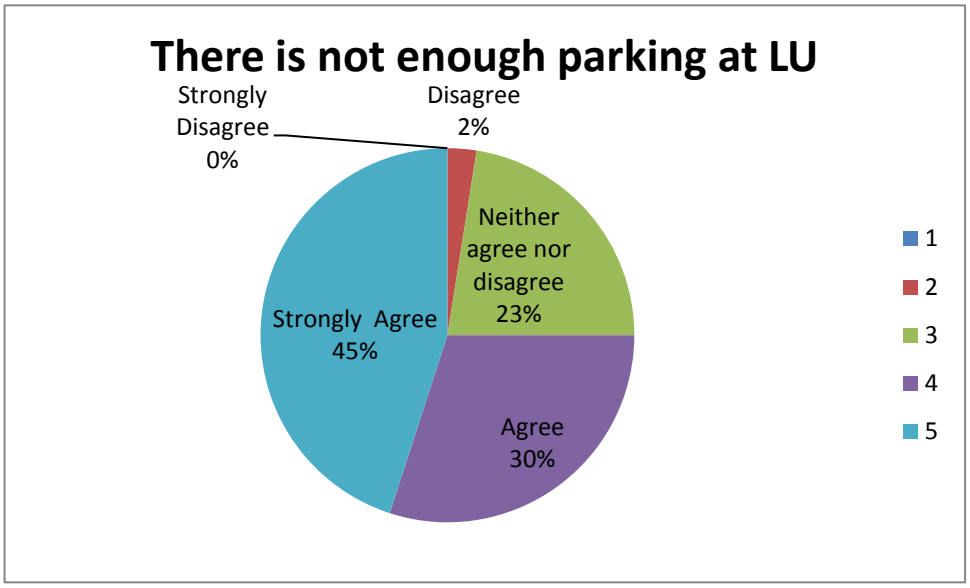


When asked to agree or disagree with the statement "There is enough parking space at Lindenwood University", 27 (67.5%) disagreed or strongly disagreed, 4 (10%) neither agreed nor disagreed, and nine (22.5%) agreed or strongly agreed.

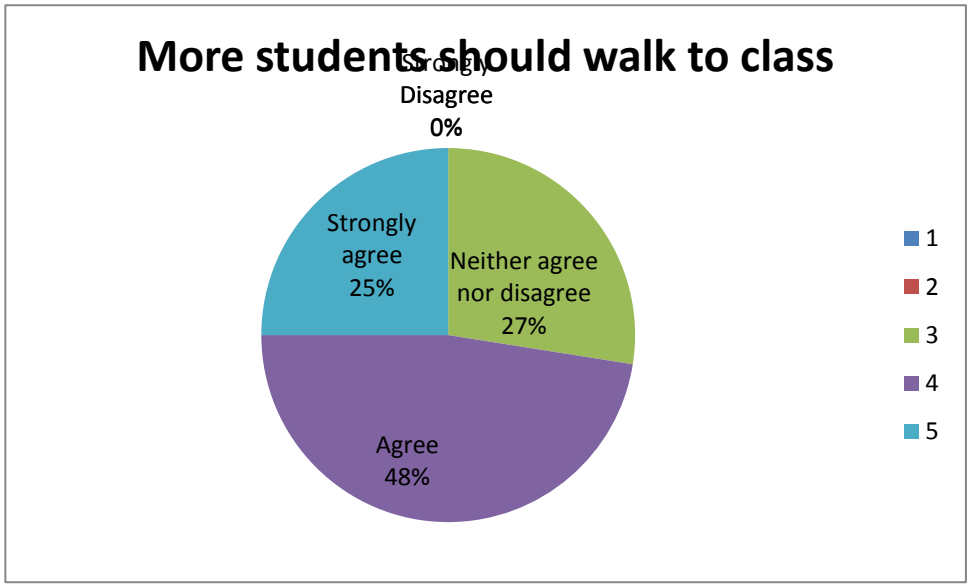


When repeated with the statement "There are not enough parking spaces at Lindenwood University. Lindenwood University should add more space for parking",

one (2.5%) disagreed, nine (22.5%) neither agreed nor disagreed, and 30 (75%) agreed or strongly agreed.



When asked to agree or disagree with the statement "More students should walk, ride bikes, or carpool to class", zero disagreed, eleven (27.5%) neither agreed nor disagreed, and 29 (72.5%) agreed or strongly agreed.



Based on the observations, there is no time in the day during which all of the parking spots on campus were full. Between 9:15 a.m. and 9:30 a.m. on Friday,

November 21, there were an estimated 175 open parking spots, with 125 of those being in the lot behind Butler Hall, next to Harmon Hall. At the same time that those spots were open, there were 11 cars parked illegally in the large parking lot by the Spellman Center. By 11:00 a.m. this number had increased to 24, while the number of empty parking spots remained about the same. For a map showing which lots are usually full and which ones are empty during the peak hours for class, see appendix E.

Discussion

Based on the observations, there is no actual lack of parking at LU. Many of the participants commented that more parking should be added closer to the classroom buildings, with one participant calling the parking by Harmon Hall "useless" since he or she does not have class in that building. This just shows that the students have the idea that they should not have to walk long distances to class. Students drive from the houses because the walk takes from 10 to 15 minutes. Students do not want to walk that long, and they also commented that they do not have time for that. However, the majority reported that they usually have trouble finding a parking spot, so the difference in time may not be that significant.

The fact that so many cars were parked illegally while so many spots were open is significant. It shows that the students assume that there are no available spots without checking. This is apparent from the survey, as 75% of the participants believe that there is a lack of parking space. Only 40% of the participants reported driving to class, so there are participants who walk to class who believe that there is a lack of parking. Perhaps the students think that there is a lack of parking based solely on what they hear from other students.

A 15 minute walk to campus is not too long for most people, depending on their schedules and level of physical fitness. Even students who find the walk to campus challenging at the beginning will improve over time, while improving their physical fitness at the same time. If the 75% of students who live in LU owned houses who drive started walking instead, there would be many more parking spots available on campus. They would also help the environment and themselves.

On the other hand, LU would not score well on the Walking Suitability Assessment. There is no sidewalk for most of the walk to the girls' neighborhood, and people walking from the boys' neighborhood have to cross a busy street. If more people are going to walk to class, the university is going to have to help. The most important things needed are a sidewalk all the way to the girls' neighborhood, as well as a safer way for the boys to cross the street. Many colleges use tunnels under busy streets.

One major limitation of this study was the sample size. More participants would make the results more accurate. Another limitation was that there are students who drive from dorms (this has been observed on multiple occasions) but these students did not volunteer for this study.

Future research on this area could focus on the reasons that drivers give for parking illegally, the opinions of freshmen immediately after orientation (to see if they believe that there is a problem before they have actually seen the normal routine of the campus and why), and the reactions of students who begin walking from LU housing.

References

Barker, J. (2007, June 5). One step at a time: A simple walk is good for your health, even if you're window-shopping. For fitness and weight loss, walk faster and farther. *The Gazette (Montreal)*, p. E4.

Getting Fit, One Step at a Time. (2008, April). *Tufts University Health & Nutrition Letter*, Retrieved November 24, 2008, from Alt HealthWatch database.

Lee, B. (2006, October 10). Walk into October: Take advantage of the cooler temps by beginning a walking program. *St. Joseph News-Press (MO)*, Retrieved November 3, 2008, from Newspaper Source database.

Making Your Community Walkable and Bikeable: A Guidebook for Change. (2002) Department of Health Behavior and Health Education, School of Public Health, The University of North Carolina at Chapel Hill.

Shideler, K. (2006, May 16). Steps toward a healthier you. *Wichita Eagle, The (KS)*, Retrieved November 3, 2008, from Newspaper Source database.

Sisson, S., McClain, J., & Tudor-Locke, C. (2008). Campus walkability, pedometer-determined steps, and moderate-to-vigorous physical activity: A comparison of 2 university campuses. *Journal of American College Health, 56*(5), 585-592.

Warrington, G. (2008, April 1). Taking steps to get into shape. *Irish Times*, Retrieved November 3, 2008, from Newspaper Source database.

Author Note

Sara Ohlms, Department of Psychology, Lindenwood University. saraohlms@yahoo.com

I would like to thank Dr. Nohara-LeClair for guiding me through this study with helpful advice and important questions. I would also like to thank all of the Lindenwood students who participated in my study, as well as my classmates in Advanced Research Methods who critiqued the various parts of my study. None of this study would have been possible without them.

Appendix A

Study description

How Lindenwood Students Get to Class: A study of parking versus walking

Participants will be asked to fill out a survey about how they get to class here at Lindenwood University, specifically about whether they walk or drive to class. The survey can take as little as 5 minutes, and should take no more than 10 minutes.

Appendix B

PAGE 1 SUBJECT ID#_____

HOW LINDENWOOD STUDENTS GET TO CLASS- SURVEY

1. What is your class standing?

FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER

2. What is your age? ___ YEARS

3. Do you live in campus housing? (Meaning that you actually sleep there most days of the week) YES NO

If yes, do you live in a: DORM LU OWNED HOUSE

4. Do you have a car here? (Meaning, could you drive to class if you wanted to?)

YES NO

5. How do you get to class on most days? (If you do more than one equally, circle all that apply and answer the all questions that apply.)

DRIVE (TAKE PAGE 2A) WALK OR RIDE BIKE (TAKE PAGE 2B)

CARPOOL (TAKE PAGE 3) OTHER: _____ (TAKE PAGE 3)

PAGE 2A SUBJECT ID#_____

IF YOU DRIVE:

6. What time is your first class on Monday? _____

   What time is your first class on Tuesday? _____

7. Do you usually have trouble finding a parking spot? YES NO

8. Do you usually start searching for a spot closest to the building, or do you go farther away to where you have a better chance of finding a spot?

   CLOSE FAR DEPENDS

9. If you could not find a spot, would you park illegally (at the end of a row or along the side of the street)? YES NO

10. Have you ever walked to class from where you live now?

    YES NO

11. If yes, how long was the walk? _____ MINUTES

12. What is the reason that you drive instead of walk?

Continue to PAGE 3

PAGE 2B SUBJECT ID#_____

IF YOU WALK OR RIDE A BIKE

13. How long is the walk/ride to campus from where you live now? ___MINUTES

14. On a scale of 1 to 5, how much do you enjoy the walk/ride to campus?

1- STRONGLY DISLIKE 2- DISLIKE

3- NEITHER LIKE NOR DISLIKE

4- LIKE 5- STRONGLY LIKE

15. Answer only if you **do not** have a car: If you had a car, would you drive to class?

YES NO

16. Answer only if you **do** have a car: Why do you walk or ride a bike instead of drive?

Continue to PAGE 3

PAGE 3 SUBJECT ID#_____

FOR ALL PARTICIPANTS

Agree or disagree:

17. There is enough parking space at Lindenwood University.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

18. There are not enough parking spaces at Lindenwood University. Lindenwood University should add more space for parking.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

19. More students should walk, ride bikes, or carpool to class.

Strongly Disagree Disagree Neither agree nor disagree Agree Strongly Agree

20. Is there anything else that you would like to say about the parking situation at Lindenwood University?

Thank you for your participation!

Appendix C

Feedback Letter

Thank you for participating in my study. The questionnaire was used in order to determine the parking behaviors of students at Lindenwood University, and to find out if there would be less problems with parking if more students who live in student housing walked to class.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of students, of which you are now a part. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:
Sara Ohlms Cell: (314)-630-7445

Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix D

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking how I get to class at Lindenwood University. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

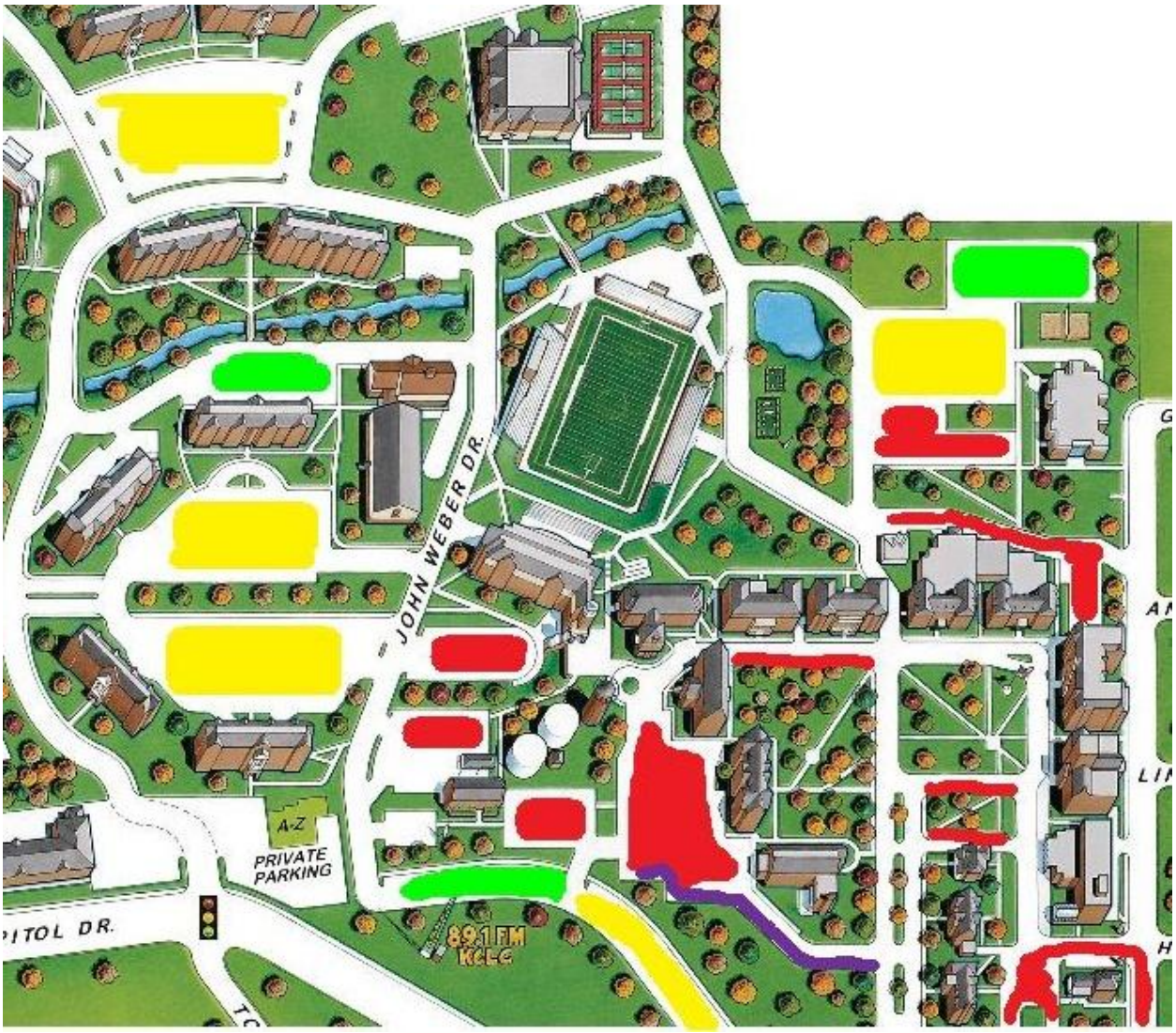
(Signature of researcher obtaining consent)

Student Researcher's Name and Number:
Sara Ohlms
(314)-630-7445
saraohlms@yahoo.com

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636)-949-4371
mnohara-leclair@lindenwood.edu

Appendix E

The yellow areas usually have parking available, the green areas usually have a high number of parking spots available, the red areas usually do not have any open parking spots, and the purple line shows where there are usually cars parked illegally. These estimates are for the peak hours on campus.



To Play or Not to Play:

Comparing Athlete's GPA to Non-Athlete's GPA

Lisa Clark & David Kanning

This study examines whether participating in athletics at Lindenwood University is related to the athlete's GPA. It was hypothesized that due to the higher demands of coaches and maintaining a minimum GPA, athletes will have a higher GPA than non-athletes. The researchers contacted professors and coaches to ask permission to survey their students and athletes. After giving a survey to participants, the Lindenwood University Registrar's Office looked up official GPAs of participants who gave their permission. The findings showed no significance supporting our hypothesis. There are several possible reasons for this weak correlation such as the number of participants and not receiving consent to look up participants' GPA. However, this study could lead to the possibility of conducting some interesting future research.

Historically, athletics have been a rising influence in the lives and culture of numerous individuals. Not only are athletes participating in sports at the professional level but also at the collegiate level. These athletes are dedicating time and effort into their particular sport while focusing on receiving an education of their desired field of study. The effect of such strenuous time and effort has also been a topic of much debate over the recent years. Consequently, the growth of American sports has contributed to the evolution of specific sports stereotypes and myths, most notably the 'dumb jock' stereotype (Sailes, 1993). Does playing a particular collegiate sport affect the study, or grade point average, of the student-athlete?

While athletes may miss out on some of the experiences of college, Potuto and O'Hanlon (2007) conducted a study, in which, 90% of the student-athletes rated their experience in college as "Good" or "Excellent." The same study indicated that nearly 80% of student-athletes attributed athletics to positive personal and educational development. In addition, the study noted the tremendous amount of support the athletes receive from coaches, professors and their peers.

However, some professors resent student-athletes because they miss more classes than the average student. A study by Van-Blerkom (1996) found a significant correlation between class attendance and final course grade. This finding was confirmed by a study by Silvestri (2003) where a positive correlation was found between attendance and college degrees. Athletes have to deal with the negative impact of missing class and have to work even harder to make up class work. According to the *College Student Journal's* Ten Commandments, "Class attendance is a must, unless you want everything to go 'bust'" (Parish, Henke, & Dopp, 2007). The same article talks about time management, working hard, and self-confidence and how they affect students.

In a recent article in *Sporting News*, Ryan Fagan (2008) explains how Division I college basketball players have improved their GPA through mandatory study halls. These athletes have to deal with lots of exposure and academics are something that can easily be forgotten by the player. The coaches at Lindenwood that require study tables force the student-athletes to focus on their academics, hoping that this will help their GPA.

We, as researchers, are interested in athletics and the relationship between playing a sport and a student's GPA. We would like to conduct research to see if being active

and participating in a collegiate sport at Lindenwood University is related to student-athletes' GPA. It is believed that an athletes' GPA is positively related to eligibility rules set by the university and/or team, team study halls made mandatory by the coach, and individual coaches' demands. This research will require researchers to administer a brief survey with questions related to GPA, college sport, year in school, practice and game times, and coaches' demands set promoting education at Lindenwood University. Just as previously researched by Sedlacek and Adams-Gaston (1992), who used SAT scores in selecting and predicting the early student-athletes' success in school, we too are expanding the research to see if GPA is affected by participation in a collegiate sport.

Thus, we predicted that student-athletes would have a higher grade point average than students who did not participate in a sport. Therefore, it could be assumed that if non-athletes had a lower GPA, they might want to consider participating in a collegiate sport to increase their GPA.

Even though athletes have become increasingly more popular over the years, athletes have been targeted by negative stereotypes, specifically involving education. Researchers do believe that these athletes, not of the norm society, have broken these stereotypes and are receiving and working hard for a higher GPA that is often times higher than that of non-athletes.

Method

Participants

A total of 63 participants completed the survey. Due to illegible handwriting or consenting to have their GPA looked up, 4 participants were excluded. Therefore, 59 Lindenwood University undergraduate students were used in this study. First semester

freshmen were excluded from the study due to the fact that they do not have a collegiate GPA. Participants were recruited from the Lindenwood Table Tennis team on campus and from Psychology classes at Lindenwood University. There were 21 student-athletes and 38 students who do not participate in athletics. Also, there were 20 males and 39 females. Of the 59, two were second semester freshmen, 16 were sophomores, 20 were juniors, and 21 were seniors.

Materials

The only materials used in this study included an e-mail sent out to coaches and professors (see Appendix A), two informed consent forms (see Appendix B), one for the researchers and one for the participant, a 14-question survey (see Appendix C), a consent form to have the Lindenwood Registrar look up the participant's GPA (see Appendix D), a feedback letter with the researchers' contact information (see Appendix E), and pens for the participants to use. The survey included questions such as amount of credit hours, whether the participant plays a sport, and additional information related to GPA and the participant's sport. The survey was personally created by the researchers.

Procedure

The experimenters first contacted the professors or coaches to arrange a time to offer the survey. Experimenters showed up on time and informed the participants that the survey was optional and not mandatory. Those willing to participate were given an informed consent form to sign as well as a consent form to have their GPA looked up by the faculty advisor. After all preliminary paperwork was filled out and all questions had been answered, the survey was conducted. Once participants were finished with the survey, they turned it in, and were compensated for their time with candy. They were

given a feedback letter which included information about the study and contact information for the experimenters. Questions were also fielded by the experimenters in regards to the survey. The experimenters then analyzed and processed the results which were made available to the participants.

Results

This study that was conducted included 20 males and 39 females (see Table 1) ranging in age from 18 to 26 with 84.7% of the participants among the ages of 19-22 (see Table 2). Of the 59 participants, there were 2 second semester freshmen, 16 sophomores, 20 juniors, and 21 seniors (see Table 3). Also, among the 59 participants, there were 21 student-athletes and 38 non-athletes (see Table 4). Additional information was asked of the student-athletes. A total of 10 sports were represented in our study. Over 42% of the athletes did not have to miss a single class because of their athletic event. However, one-third had to miss 4 or more classes (see Table 5). The vast majority of the athletes were not required by their coaches to have study tables, which is a team study hall monitored by the coach. Surprisingly, none of the athletes were required to have study halls while on the road. In addition, all of the athletes stated that they had to maintain a certain GPA, most likely the 1.5 required by the University, to remain eligible to participate in their collegiate sport. All of this information led to our hypothesis: athletes would have a higher GPA than non-athletes. After conducting a one-tailed independent t-test, no significance was found supporting out hypothesis that athletes would have a higher GPA. The mean GPA of athletes was about 2.75 and the mean GPA of non-athletes was about 2.46 (see Table 6.1). The critical value was .804 and our computed value was .424 (see Table 6.2).

Discussion

The results of this study were disappointing because we could not find significance. We cannot say that athletes have a higher GPA than non-athletes. This means that the study halls and demand of the coaches do not help athletes to improve or keep a higher GPA than non-athletes. Perhaps if more participants had been run or if various universities had been considered, our hypothesis would have been supported. Our results did not cover attendance of participants sufficiently enough. Athletes were asked how many classes they missed due to their sport, but non-athletes were not asked about their attendance at all. Because of this, it was not reasonable to conclude anything about attendance and GPA. One can suppose that attendance is positively correlated to GPA.

Overall, there were several limitations to this study. The first limitation pertains to the number of participants in the study. We were unable to coordinate with the coaches as well as we had hoped and this is reflected in the demographics. There were nearly twice as many non-athletes as there were athletes. Also, there were twice as many women as there were men. The study could have incorporated other departments because the Psychology department is made up of mostly females. This likely skewed the correlation coefficient. Also, if the study were to be conducted again, a shorter survey would be recommended. Another limitation of this study was the reliance on others in order to conduct the study. We were dependent on coaches and professors concerning times to meet, and we were dependent on the Registrar to provide us with feedback about the GPAs. The results of this study can lead to other topics for future research. Future considerations include the involvement of coaches within their player's academics,

professor's attitude toward student-athletes and whether there is a relationship between an athlete's grade and the level of support or adaptability that the professor provides. Another area to look at is the level of effort put forth by an athlete in class compared to the level of effort in their particular sport. If solutions are made to the limitations brought up in this study, the researchers are confident that their hypothesis would be supported.

References

Fagan, R. (2008). Play hard, study hard. *Sporting News, 232*(14), 18.

Parish, T., Henke, W. & Dopp, A. (2007). The ten commandments for college student-athletes. *College Student Journal, 41*(4), 1045.

Potuto, J.R. & O'Hanlon, J., (2007) National study of student-athletes regarding their experiences as college students. *College Student Journal, 41*(4), 947-966.

Sailes, G. A. (1993). An investigation of campus stereotypes: The myth of black athletic superiority and the dumb jock stereotype. *Sociology of Sport Journal, 10,* 88-97.

Sedlacek, W. E., & Adams-Gaston, J. (1992). Predicting the academic success of student-athletes using SAT and noncognitive variables. *Journal of Counseling & Development, 70,* 724-726.

Silvestri, L., (2003). The effect of attendance on undergraduate methods course grades. *Education, 123*(3), 484-486.

Van Blerkom, M. L., (1992). Class attendance in undergraduate courses. *Journal of Psychology 126,*(5), 487-494.

Author Note

Lisa Clark, Department of Psychology; David Kanning, Department of Psychology, Lindenwood University.

Lisa and David would like give a special thanks to Dr. Nohara-LeClair for her support, feedback, assistance, and encouragement throughout the duration of our project. We would also like to thank the Registrar's office, especially Barry Finnegan and Jeff Weinrich, for all their help in providing the GPAs of the participants. We appreciate Dr. Kelly, Dr. Scribner and the coaches who allowed us to interrupt their classes and practices to conduct our study. We finally thank our classmates who reviewed and commented on our paper.

Correspondence concerning this article should be addressed to: David Kanning, 3307 Woodsway Dr., St. Charles, MO 63303. E-mail: davidkanning@sbcglobal.net

Appendix A

Email Sent to Professor

Dear Professor,
My name is David Kanning/Lisa Clark and I, along with a partner, am conducting an experiment for my Advanced Research Methods class. I would like to conduct a survey in your class and was hoping to arrange a time in which this would be possible. The survey will take no more than 10 minutes of class time and the students will be compensated for their time. Please note that participation by the students is not required and is completely voluntary.

Thank you for your consideration,

David Kanning
Lisa Clark

Email Sent to Coaches

Dear Coach_____
My name is David Kanning/Lisa Clark and I, along with a partner, am conducting an experiment for my Advanced Research Methods Class. I would like to conduct a survey before one of your team's practices and was hoping to arrange a time in which this would be possible. The survey will take no more than 10 minutes and the athlete's will be compensated for their time. Please note that participation by the students is not required and is completely voluntary.

Thank you for you consideration,

David Kanning
Lisa Clark

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short survey asking about my study habits, GPA, and my participation in Lindenwood University Athletics Program. I understand that I should be able to complete this project within 10 minutes. I understand that my GPA will be viewed by the researchers and the Supervisor, but all information will be kept confidential. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study will be answered by the researchers involved to my satisfaction. Finally, I verify that I am at least 18 years old and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

_____ Date:_____

(Signature of researchers obtaining consent) Supervisor

Lisa Clark 314-803-8521 Dr. Michiko Nohara-LeClair

David Kanning 636-299-1957 (636) 949-4371

mnohara-leclair@lindenwood.edu

Appendix C

PLEASE ANSWER ALL OF THE QUESTIONS. IF A QUESTION DOES NOT APPLY OR MAKES YOU UNCOMFORTABLE, PLEASE SKIP. THANK YOU!

1 . I am a: MALE FEMALE

2. I am a FRESHMAN SOPHOMORE JUNIOR SENIOR

3. How old are you? _____years old

4. Do you participate in a sport at Lindenwood University? YES NO
If no, skip to question #13.

5. What sport(s) do you participate in?_____

6. How many games do you have a week during the season? _____

7. What times are your games typically during the week?_____

8. On average, how many hours are spent traveling during the school week to your athletic event?_____

9. Have you ever missed a class period because of your athletic activity? YES NO

How many? 1 2 3 4 5 more than 6

10. Does your coach require that you have study tables/study hall? (any set time dedicated to homework with the team) YES NO

If yes, how many hours a week?_____-

11. On the road, does your coach require you to have study tables/study hall? YES NO

12. Does your team require you to maintain a certain GPA to be eligible to participate in the sport? YES NO

13. How many credit hours are you taking?_____

14. On average, how many hours do you spend studying or doing homework a week?

0-1 1-3 3-5 5-7 7-9 more than 10

Appendix D

GPA Consent Form

I understand that by giving my consent to the experimenters, I am allowing Dr. Michiko Nohara-LeClair, faculty advisor for Advanced Research Methods, permission to obtain the records of my GPA. I also understand that all information given to the experimenters will be given back confidentially and anonymously.

_____ _____

(Signature of Participant) (Date)

_____ _____

(Signature of Experimenter) (Date)

_____ _____

(Signature of Faculty Advisor) (Date)

Appendix E

Feedback Letter

Thank you for participating in our study. The survey was used in order to determine if participation in a collegiate sport at Lindenwood University is related to the GPA of those athletes. The survey was also used to show or indicate if any trends relating to age, sex, specific sport, and coach/teacher involvement relates to the students' GPA.

Please note that we are not interested in your individual results: rather, we are only interested in the results of a large group of athletes and non-athletes at Lindenwood University, of which, you are a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, do not hesitate to bring them up now or in the future. Our contact is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact, and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principle Investigators:

Lisa Clark	314-803-8521	ljc815@lionmail.lindenwood.edu
David Kanning	636-299-1957	dlk644@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 mnohara-leclair@lindenwood.edu

Table 1.1

Sex of Participant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	20	28.6	33.9	33.9
	Female	39	55.7	66.1	100.0
	Total	59	84.3	100.0	
Total		70	100.0		

Table 2.1

Age of Participant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	2	2.9	3.4	3.4
	19	13	18.6	22.0	25.4
	20	9	12.9	15.3	40.7
	21	11	15.7	18.6	59.3
	22	17	24.3	28.8	88.1
	23	3	4.3	5.1	93.2
	24	2	2.9	3.4	96.6
	25	1	1.4	1.7	98.3
	26	1	1.4	1.7	100.0
	Total	59	84.3	100.0	
Total		70	100.0		

Table 3.1

Class Rank

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	2	2.9	3.4	3.4
	Sophomore	16	22.9	27.1	30.5
	Juniors	20	28.6	33.9	64.4
	Seniors	21	30.0	35.6	100.0
	Total	59	84.3	100.0	
Total		70	100.0		

Table 4.1

Athletic involvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	30.0	35.6	35.6
	No	38	54.3	64.4	100.0
	Total	59	84.3	100.0	
Total		70	100.0		

Table 5.1

Absence in class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	12.9	42.9	42.9
	2	3	4.3	14.3	57.1
	3	2	2.9	9.5	66.7
	4	1	1.4	4.8	71.4
	5	2	2.9	9.5	81.0
	6	4	5.7	19.0	100.0
	Total	21	30.0	100.0	

Table 6.1

Group Statistics

	Athletic involvement	N	Mean	Std. Deviation	Std. Error Mean
GPA of All	Yes	21	2.7495	1.30661	.28513
	No	38	2.4595	1.33627	.21677

Table 6.2

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
GPA of All	Equal variances assumed	.088	.768	.804	57	.424	.29005	.36054	-.43191	1.01201

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
GPA of All	Equal variances assumed	.088	.768	.804	57	.424	.29005	.36054	-.43191	1.01201
	Equal variances not assumed			.810	42.184	.423	.29005	.35817	-.43268	1.01278

Can Normal Habits Affect GPA?

Jessica Hildebrand and Regina Thurman

We wanted to see if there was a correlation between sleep and/or caffeine and students' grade point average (GPA). To do this we surveyed 101 Lindenwood undergraduate students. We asked them how much caffeine they consumed in a day, how much sleep they get within a seven day period, and their GPA, as well as basic demographic questions. Our study found that there was a weak negative relationship between sleep and GPA whereas no relationship between caffeine consumption and GPA. We conclude that since no relationship has been found, we have made suggestions on how to investigate further given some of the limitations of our study.

The Grade Point Average (GPA) is the best and simplest indicator of a person's educational success as a college student. We feel that two major challenges preventing a college student from maintaining a high GPA could involve getting the right amount of sleep each night, and using the consumption of caffeine as a method of staying awake longer. A correlation has been found showing that students who do not get enough sleep are less psychologically healthy than those who do get enough sleep (Kelly, 2004). Another study showed that at least 73 percent of college students surveyed had sleep issues (Buboltz, Brown & Soper, 2001).

Young adults are among the largest group of individuals that are sleep deprived (Forquer, Camden, Gabriau & Johnson, 2008). This sleep deprivation has been shown to have negative effects on academic performance (Forquer, et al). A majority of people who consume caffeine were found to drink mostly coffee and tea (Brice & Smith, 2002).

Brown and Buboltz state that sleep difficulties go beyond simply getting insufficient sleep to include not getting the right kind of sleep (2001). For example, students who do not get adequate amounts of REM, or rapid-eye movement sleep, perform significantly worse recalling newly learned information than students who had normal sleep or missed non-REM sleep stages (2002). Caffeine has been shown to reduce total sleep time in deep sleep and increase the amount of time in stage 1 sleep, or the first part of sleep when you become drowsy (Carrier et al, 2007). We believe that caffeine consumption can alter GPA through getting less than the desired amount of quality sleep. Caffeine is shown to impact daytime sleep more so than nocturnal sleep (Carrier et al, 2007).

We hypothesized that people who get fewer hours of sleep and consume a substantial amount of caffeine in a day will have a lower GPA. We believe that less than the average amount of sleep a person is supposed to have each night, less than eight hours as stated by Forquer et al, will impact their GPA score negatively. We also believe that a person's GPA can be altered by substantial amounts of caffeine and sleep deprivation. Studies show that there are consequences to psychological functioning due to sleep deprivation (Anonymous, 2008).

Method

Participants

Some of our participants came from the Human Subject Pool (HSP), and the rest from classes, pending professor approval. The HSP consists of undergraduate students that are enrolled in 100 level psychology, sociology, and anthropology courses. We recruited 101 participants, 45 being male and 56 being female, approximately ages 18 to 30, 30 coming from upper level classes and 71 from lower level classes. All students

were enrolled at Lindenwood University in the undergraduate program. The students that we recruited through the HSP received extra credit for the course that they were enrolled in. All students that were involved in our study, both from the HSP and from classes, got a piece of candy for participating in our study.

Materials

The materials that were used in our study was a desk that had four chairs, all of the necessary paperwork (read procedure), and pens to fill out our survey with.

Procedure

To recruit our participants we put up a printed out a signup sheet (Appendix A), and description of the experiment (Appendix B), to place on the Human Subject Pool board. We also got permission from faculty members to ask their students if they would like to participate in our study.

To begin the experiment we will start by having the participant(s) sit down and fill out the informed consent forms (Appendix C), one of which we retained and the other they kept. If they were in the Human Subject Pool they also filled out the list of participants sign in sheet. Then we briefly described our experiment for them, and asked them to fill out our survey that consisted of questions that ask them about their sleep habits, caffeine consumption and GPA, along with other demographic questions (Appendix D). Once they had completed the survey, they were given a feedback letter (Appendix E), and if they were part of the Human Subject Pool, they got their participant's receipt to receive extra credit, and then they were free to leave. Please note that the participants were assigned a random number to ensure confidentiality.

Results

An analysis of a Pearson Correlation was performed on participants' responses to our questionnaire revealed that there was no relationship found in our study. For the correlation of total ounces of caffeinated drinks and GPA *r*=.000. We suspected that students that had higher amounts of caffeinated drinks in a day would have a lower GPA. The correlation for hours of sleep in a seven day period and GPA *r*= -.152. We also suspected that students that got fewer hours of sleep in a week's time would have a lower GPA. The mean for ounces was 23.6931 and a standard deviation of 17.70127. The mean for GPA was 3.6832 with a standard deviation of .56446. The mean for hours of sleep in a seven day period ranged from 41 hours to 50 hours with a standard deviation of .794. We altered all of the caffeinated drinks in to ounces for the measurement. We had originally used terms such as cups and drinks. For the amount of sleep we had the participants average how many hours they got in a seven day period, not per night.

Discussion

We hypothesized that people who get fewer hours of sleep and consume a substantial amount of caffeine in a day will have a lower GPA. Our findings did not implicate that lower amounts of sleep and higher amounts of caffeine correlated with GPA in a positive or negative way. We concluded that there was no relationship between caffeine and GPA. We simultaneously concluded that sleep had a weak, negative relationship with GPA.

Our findings contrasted Kelly's findings, in which he found significance between sleep deprivation and the participants' psychological health (Kelly, 2004). Buboltz, Brown and Soper also found that seventy-three percent of college students have sleep

difficulties, but our study did not find that sleep issues negatively impacted their GPA (2001). Our hypothesis was supported by past research conducted by Forquer, Camden, Gabriau, and Johnson, however our findings suggest more research must be done to fully determine significance (2008). Brice and Smith's findings were similar to ours in that neither study found a correlation between caffeine consumption in relation to other measures that were assessed (2002).

One limitation we found in our study was that we did not have a large enough sample of upper classman surveyed. Only 30 of 101 participants had upper classman status. We believe that if there were more students of upper classman status there would have been a better range and possibly shown a correlation. The other main limitation found was that all the GPAs were self-reported, and not collected officially through the registrar. Self-reporting does not always give accurate information.

We found several portions of our study that could be improved or changed for future studies to be conducted. One would be to make sure that all types of caffeine are converted to the same amount, such as ounces, to make statistical analysis go more smoothly. In our study, different forms of measurement were used, and had to be converted to the same type of measurement to be combined and computed for analysis. We also needed to clarify exactly how many ounces constituted one cup of a caffeinated drink in our questionnaire. The last part of our study that we would change for future studies would be when we conducted our study. Most of our participants were surveyed around midterm exams, so testing them at the beginning of the semester or during the summer could have an impact on the results.

In conclusion, we found no correlation between sleep, caffeine, and GPA. No relationship was found between caffeine and GPA, and there was a weak, negative relationship between sleep and GPA. Future studies should be conducted with a larger, more representative sample of college students to determine whether sleep and caffeine amounts do definitively correlate with their GPA.

References

Anonymous. (2008). American academy of sleep medicine; Poor sleep can affect a student's grades, increase emotional, behavioral disturbances. *Psychology and Psychiatry Journal, N/A,* 30.

Brice, C.F. & Smith, A.P. (2002). Factors associated with caffeine consumption. *International Journal of Food Sciences and Nutrition, 53,* 55-64.

Brown, F. & Buboltz, W.C.,(2001). Applying sleep research to university students: Recommendations for developing a student sleep education program. *Journal of College Student Development, 43,* 411-416.

Buboltz, W.C., Brown, F.C., & Soper, B. (2002**).** Sleep habits and patterns of college students: A preliminary study. *Journal of American College Health, 50,* 131-135.

Carrier, J., Fernandez-Bolanos, M., Robillard, R., Dumont, M., Paquet, J., Selmaoui, B., & Filipini, D. (2007). Effects of caffeine are more marked on daytime recovery sleep than on nocturnal sleep. *Neuropsychopharmacology, 32,* 964-972.

Forquer, L.M., Camden, A.E., Gabriau, K.M., & Johnson, C.M. (2008). Sleep patterns of college students at a public university. *Journal of American College Health, 5,* 563-565.

Kelly, W.E. (2004). Sleep-length and life in a college student sample. *College Student Journal, 38,* 428-430.

Author Note

Jessica Hildebrand, Department of Psychology, jrf741@lionmail.lindenwood.edu or 636-219-3442; Regina Thurman, Department of Psychology, rat441@lionmail.lindenwood.edu or 573-721-1786 Lindenwood University

We would like to thank Dr. Nohara-LeClair and Dr. Biri for their generous time and knowledge that they attributed to our study. We would like to also thank all of the Lindenwood undergraduate students that participated to make our study possible.

Appendix A

Description:

In this study, you will be asked to complete a questionnaire asking you to report on such things as your sleep habits, caffeine intake, as well as your GPA. The entire procedure should take no more than 10 minutes of your time.

Appendix B

Sign-up Sheet

Project #: ____09-18_____
Experiment Name: Can normal habits correlate with your GPA?
Place: _____

Date	Times	Name (please print)	Must give 1: Phone # or e-mail	Best time to be reached	Professor	Class Day & Time	Experimenter Responsible
10/14	12:30						Hildebrand and Thurman
10/14	12:40						Hildebrand and Thurman
10/14	12:50						Hildebrand and Thurman
10/14	1:00						Hildebrand and Thurman
10/14	1:10						Hildebrand and Thurman
10/14	1:20						Hildebrand and Thurman
10/14	1:30						Hildebrand and Thurman
10/14	1:40						Hildebrand and Thurman
10/14	1:50						Hildebrand and Thurman
10/14	2:00						Hildebrand and Thurman

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a questionnaire asking about how much caffeine I intake in a day, how many of hours of sleep I get a day, and my GPA. I understand that I should be able to complete this project within 5-10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____
(Signature of participant)

_____ Date: _____
(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers

Regina Thurman 573-721-1786
(rat441@lionmail.lindenwood.edu)
Jessica Hildebrand 636-219-3442
(jrf741@lionmail.lindenwood.edu)
Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636)-949-4371
mnohara-leclair@lindenwood.edu

Appendix D

*ID#*_____

Questionnaire

1. Please circle one. Are you a MALE or FEMALE?

2. Please circle one. Are you a FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER?

3. Do you drink caffeinated coffee? YES NO

If yes, how many cups do you have in a 24 hour period on average? _____

4. Do you drink caffeinated soda such as Pepsi, Coke, Dr. Pepper? YES NO

If yes, how many ounces do you have in a 24 hour period on average?

For example 12 oz, 20 oz… _____

5. Do you drink other beverages that contain caffeine, such as tea, and energy drinks? YES NO

If yes how many cups/ ounces do you have in a 24 hour period?

_____

6. On average how many hours of sleep do you get in a week? _____

7. What is your current GPA as of this semester at Lindenwood (if you are a first semester freshman, what was your GPA when you graduated high school)?

_____

8. How many semesters have you attended Lindenwood? _____

9. Do you think the amount caffeine you receive a day affects you GPA in a positive or negative way? Please explain why you think your caffeine consumption affects your GPA in a positive or negative way.

_____

_____

_____

_____

10. Do you feel the amount of sleep you do get affects your GPA in a positive or negative way? Please explain why you think the amount of sleep you receive affects your GPA in a positive or negative way.

_____

_____

_____

_____

Appendix E

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine the relationship between the consumption of caffeine consumed and how many hours of sleep one gets in a day and how they correlate with GPA.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:
Regina Thurman 573-721-1786 (rat441@lionmail.lindenwood.edu)
Jessica Hildebrand 636-219-3442 (jrf741@lionmail.lindenwood.edu)

Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Can't Test This: Test Performance and Anxiety

Brian Judd, Danielle Merli, & Jamie Zagar

We analyzed test anxiety with performance on a standardized test. We had four groups of participants. We looked at two variables: time warning and presence of a confederate. We hypothesized that the performance of participants in a more natural test environment (testing in the presence of another test taker, i.e., the confederate) would perform worse than those who were tested by themselves, and that those who received a time warning would perform worse than those who did not receive a time warning. Those with a higher GPA would have performed better overall on the test. There was not a significant difference in test scores with a time warning. There was not a significant difference in test scores with the presence of a confederate.

This study analyzed the effects taking a test with the presence of a test taker and with a time warning. A time warning was given to two groups of participants at a minute and thirty seconds. A confederate took the test with participants in two groups. We believed that these variables (time warning and confederate) created anxiety that would affect the performance on a test. There were three specific purposes in this experiment. The first purpose was to determine whether the performance of participants in a more natural test environment (testing in the presence of another test taker) would perform differently than those who were tested by themselves. We believed that those taking the test in the presence of another test taker would perform less accurately than those who took the test alone. Secondly, we wanted to find out whether participants, who received a time warning, would perform differently than those who did not receive a time warning.

We hypothesized that participants not receiving a time warning would performed more accurately than participants who received a time warning during the test. Lastly, we wanted to determine whether academic success would correspond with the participants' performance on the test. We decided to focus our attention on the variables that may increase or decrease anxiety during a test. We also looked at GPA. We believed that those who had a higher GPA would have performed better on the test.

To grasp the effects of test anxiety, we reviewed journal articles dealing with test anxiety. One study dealt with the influence of perfectionism and math anxiety on a mathematics test (Tsui, & Mazzocco, 2007). The study introduced the timed versus untimed math test to gifted sixth graders. As hypothesized, Tsui and Mazzocco found that the performance of the participants on the timed math performance was less accurate than on the untimed math test. They used standardized tests to find each participant's level of math anxiety and perfectionism before and after the math tests. They also used repeated measures in their experiment. We suspected that the first test may have influenced the performance on the second test because of test familiarity, as well as if the second trial test was untimed.

In another study, Brewer (2002) compared the performance of nursing and general college students on a standardized anxiety test, the AAT. He found that all students had increased levels of debilitative anxiety. He used parts of the AAT that used two scales for measuring anxiety on future academic performance (Brewer). One scale assessed motivation anxiety toward taking a test. The second scale assessed the interference of anxiety on test performance. Each scale was scored separately. Brewer's results were significantly higher than previous research (Alpert and Haber in 1960) (as

cited in Brewer, 2002). He concluded that nursing and general college students are experiencing more anxiety now compared with students in the 1960s.

Hembree (1988) explored 562 studies to illustrate effects and treatment for anxiety on standardized assessments. Effect- size groups and relationship were being examined for steadiness with statistics. The statistics were a form of inferential statistics (Hedgkins & Olkin, 1985) (as cited in Hembree). Poor performance on a test was caused by anxiety (Hembree). A student's self-esteem decreased due to anxiety which correlates the decline in performance on an academic test. The consistency of high test performance and high grade point average (GPA) lowers one's level of anxiety. One of our study's hypotheses was that participants, who have a higher GPA, will perform better at the standardized test than those, who do not have a higher GPA. The higher performance was due to lower stress on the academic test. Test anxiety can be reduced if one performs better on a test and with a higher GPA. Therefore, Hembree found statically significant between low GPA and high test anxiety.

In another article, the experiment wanted to explain academic accomplishment. Musch and Broder (2007) wanted to test if harmful task-irrelevant beliefs during taking a test would be stressful and determine test performance. They wanted to test the performance on a statistics exam with the variable of test anxiety, study habits, and math skills. Two classes of introductory level of statistic had 66 undergraduate students who were involved in this study. The participants were tested during the class before the final exam and immediately after the participants completed the final exam. The students were also asked their final math grade in high school and were given a test anxiety

questionnaire. The experiment found test anxiety and math skills had statistical significance in performance. Study habits did not show any statistical significance.

Whitaker, Lowe, and Lee (2007) experimented with elementary and secondary school students with and without learning disabilities. The experiment wanted to see if test anxiety showed a significant difference with learning disabilities. All the participants completed the Test Anxiety Inventory for Children and Adolescents (TAICA). The TAICA is made up of Cognitive Obstruction/Inattention, Performance Enhancement/Facilitation Anxiety, Physiological Hyperarousal, Social Humiliation, Worry, and Lie. Participants with learning disabilities showed a total test anxiety was above .90, which shows statistical significance. Students, who have learning disabilities showed Cognitive Obstruction/Inattention and Worry scores were high and Performance Enhancement/Facilitation Anxiety and Lie scores were low. Students, who show a high level of test anxiety, do not perform as well as they can and are accounted for lower scores on standardized tests (Whitaker et al.).

Zachary A. Pashea (2008), a Lindenwood University graduate, experimented placing a large clock in front of participants to see whether their performance would be affected on a timed task. Participants were asked to find as many words they could solve in a word find, and the experimental group were told how much time they were given; this allowed them to know how much time they had left due to the large clock in front of them. The control group had the knowledge of how much time was given; however, there was not a clock positioned in front of them. Pashea wanted to determine whether the participants with the large clock set in front of them would find fewer words than the participants, who do not receive a clock. He figured that this would be resulted in test

anxiety. His hypothesis was not statistically significant between the two groups. Participant's time was another independent variable, which determined whether the two groups and the amount of time used to accomplish the timed tasked. This was not statistically significant between the experimental and control group.

In another article, Hancock (2001) wanted to determine student achievement and motivation was affected by certain factors. He found "learner characteristic, test anxiety, and the classroom variable, threat of evaluation" would affect a participant's achievement and motivation during tests. There were two groups-- high or low evaluative threat conditions, and the participants were randomly assigned to these groups. He found that the results were statically significant because there were interactions between the factors, which engaged to poor performance and low motivation. When the participants thought or felt they were under pressure, they felt threatened. Therefore, their level of attentiveness started to decline because of worrying how much time was left to complete the task (Hancock).

Sud and Kumar (2006) did a study on whether dysfunctional thoughts about careers and/or low motivation on achievement showed a relationship with high text anxiety. The study conducted 80 girls and 80 boys from Himachal Pradesh University in India. Sud and Kumar hypothesized these participants, who wanted a particular job, would focus more on their careers. Each participant was given three questionnaires, which included career thoughts inventory, achievement motivation scale, and test anxiety inventory. It was given to the participants in the same order as well. The three variables in the study were related through rational similarities. However, not knowing the true

definition of dysfunctional career thoughts through the field of psychology in India, the relationship's findings were not very strong.

A study completed by Schmit and Ryan (1997) looked at applicant withdrawal rate, also known as attrition, with racial differences. They tested 3,290 police officers. Those that withdrew were interviewed to find out why they dropped out of the study. There were 618 police officers that withdrew from the experiment. The remaining participants (2,714 officers) were given a pretest to measure test taking attitudes (Schmit & Ryan). They were given a general idea of the test and a study guide to use to help them with the test. The second test that participants were tested on was the content-validated exam for police officers. There were 2,054 officers who took the second exam. Out of those who dropped out of the study, there was a 50 percent response rate to telephone interviews (Schmit & Ryan). All interviews were structured. Schmit and Ryan found minimal race differences on test attitude. They concluded that African Americans were more likely to withdraw from their study. The effects of literacy, motivation, and comparative anxiety scales were small. The researchers also found that those officers with more test anxiety were more likely to stay in the study. Motivated persons were less likely to quit the study. There was not a significant difference with motivation, but Caucasians had higher motivation for taking tests because they believed in the value of testing.

Method

Participants

Seventy-six university students volunteered to participate in our study. The volunteer students were recruited through the Human Subject Pool and were able to sign

up, by means of the research project, signup sheet on Human Subject Bulletin Board on the fourth floor in Young Hall. The participants that volunteered in this study were from one of the following three classes: Basic Concepts of Sociology, Cultural Anthropology, and Principles of Psychology. Extra Credit was rewarded to volunteers for their participation in the study; there was no monetary compensation granted. Two participants' data were discarded. The first participant figured out that the confederate taking the test with her was an experimenter. She still received the participant's receipt for extra credit. The second participant was under the age of 18 years, failed to have parental consent, so he was given a participant's receipt only. He did not participate in the study.

Materials

In this study four different groups were tested. The participants in every group were given a standardized test. The groups were tested if given a time warning or took the test with another test taker would distract or overwhelm the participant's success on the test. The standardized test consisted of three subjects: Math, Grammar, and Science (ACT test practice questions) (see Appendix A). On each subject five questions were asked. All participants in each of the groups received the same standardized test; participants were given three minutes to correctly answer all the questions. Additional materials also used in study included a stopwatch to keep track of time and also allow experimenters to give a time warning to two of the groups. Pens were used to record the information and were given to the participants to utilize on the timed test and on necessary paperwork. A desk and chairs were also provided for the participants and experimenters. Required paper work was also given to the participants to fill out. This

paperwork included a questionnaire (see Appendix B), two informed consent forms (see Appendix C), experimenter's list of participants, a feedback letter (see Appendix D), and a receipt showing proof of participant took part in the study.

Procedure

The recruitment description and sign-up sheets were posted on the HSP bulletin board on the fourth floor of Young Hall. When participants arrived at the designate lab room for the experiment, they were given two informed consents forms (see Appendix C) to read and sign. One copy was given to the experimenters and the other was given to the participants for their own records. Each participant also signed the experimental participant list when they arrived.

Each participant was given a multiple choice test over three subject areas (see Appendix A). The areas included Grammar, Mathematics, and Science on an ACT level that was to be completed within three minutes (ACT test practice questions). Each subject area contained five questions, a total of 15 questions.

The experimenters chose to have four different groups to study. Group one was not given a time warning and did not take the test with another test taker. Group two took the test with another test taker without a time warning. Group three took the test alone but was given a time warning. Finally, group four was given a time warning in the presence of another test taker. A confederate test taker took the test with groups three and four. All tests had the same format.

After completing the test, each participant was given a survey to fill out about his/her experience with the experiment, as well as over his or her demographic information. The participant was debriefed about having a confederate test taker in the

room, as well as the purpose of the study. The experimenters also gave the participant a feedback letter and answered all questions the participant had about the experiment and when the results of the study would be available to him or her.

The participant was given the participant's receipt that both the experimenter and participant signed to be turned in the HSP office. The participant then took the receipt to the HSP office to receive bonus points for one of the three general classes of Anthropology, Sociology, or Psychology. All tests were graded after all the participants in one day took the test. Results of individual tests were not given to any participant.

Results

Out of seventy-four participants, based on our survey questions, we found that the self-reported average GPA was 3.28, with a standard deviation of .49. The percentage of native English speakers was 86.5 percent (64 participants), with a standard deviation of .344. The mean score for the stress level on the standardized test was 2.899, with a standard deviation of 1.08. The average test score was 4.04, with a standard deviation of 1.96. The average question that participants ended their test on was 9.55, with a standard deviation of 3.2. For those participants that received a time warning, the average number that they completed at 1 minute 30 seconds was 4, with a standard deviation of 1.4.

Group one (20 participants), in which participants were not given a time warning and did not take the test with another test taker, scored a mean of 3.95 out of a possible 15 points, with a standard deviation of 1.88. Group two (17 participants), in which took the test with another test taker without a time warning, scored a mean of 4.00 on the test, with a standard deviation of 1.9. Group three, combined of 20 participants, took the test alone but was given a time warning, scored a mean of 3.70, with a standard deviation of

2.39. Finally, Group four (17 participants), in which participants were given a time warning in the presence of another test taker, had a standard deviation of 1.54. We conducted a 2 (time warning) x 2 (confederate) analysis of variance. It did not reveal the main effects of time warning, $F(1, 70) = .136$, $p > .05$. or confederate, $F(1, 4) = 1.044$, $p > .05$.

Next, we examined the relationship between participant GPA and test score. We conducted a Pearson Correlation. We found a very weak positive correlation between the two. The Pearson Correlation was .165

Our group also decided to look at Groups three and four because they received a time warning at one minute and 30seconds. We wanted to see if the participants would increase their speed on the test from what number they finished at the time warning to the finish time of three minutes. We conducted a paired t-test to determine the difference between how many questions were completed during the first half and second half o the three minute test session and to find out if there was significance in speed. We used the time warning and the difference (ending question minus time warning question) to determine the relationship. We found that that speed did increase after the time warning, $t(36) = -5.379$, $p < .05$, $p < .001$. We concluded that those that received a time warning, overall, increased their speed on the standardized test by a significant amount.

Discussion

We were interested in Schmit and Ryan's (1997) study because of racial differences. We used pieces from a standardized test for our own experiment. We wondered if the questions on our test were biased toward Caucasians. Because English was not the first language for some of our participants, we were curious about the

understanding of the participants. As in Schmit and Ryan's study, they were concerned with racial and cultural differences with attrition rate. We were also concerned with the results of our study, if they would be accurate in testing and performance with test anxiety. We found it was interesting that the results of the attrition study showed that those who had a higher test anxiety were more likely to stick with the test environment. We would have liked further information about the testing environment, whether the participants were tested in groups or individually. It would have been ideal for our own experiment to test participants in groups, individually, and with a confederate. However, we would not have been able to control for the group environment as well as we could have with one confederate and experimenters with a participant.

It would have been ideal for us to have used the AAT or some other anxiety test to use with our study (Brewer 2002). However, it may have increased the level of anxiety of each participant on our test. If we would have added the systematic variable, our results could have been altered by a confounding variable that would have affected the systematic variance in a negative way.

Two of our hypotheses were not supported. We did not find a significant difference in test scores between those receiving a time warning and those who did not. We were not able to find a significant difference in test scores between participants taking the test with a confederate or by themselves. We believe that the time warning may have increased the speed of the participants in the time warning groups that may have influenced how fast and poorly they performed on the test. However, other factors that may have influenced all participants' scores were the following: lack of motivation to perform well, not understanding the standardized test, and the test environment of a

small, confined room. Those taking a test with the confederate may not have felt pressure from taking the test with someone because they might have felt that the confederate was older and might have known more answers because of school experience.

While we found a slight significance in the relationship between GPA and test score, it was not enough to declare it a high positive correlation. A main reason for this was that participants self-reported their GPA on the survey. Not all participants knew their GPA; some were freshmen and did not have a cumulative GPA for college; and some may have lied about their GPA in order to please us with a higher GPA (even though it would not have mattered to us). We did not have them fill out an additional consent form to find out their GPA. We decided not to because it was not our main hypotheses and required much more effort.

We were very interested in how much quicker participants performed on the test after receiving the time warning. We were not surprised to find that there was a significant difference between the number that participants in groups three and four completed at the time warning and what number they completed when the total time was up. We believed that people generally sped up once they found out how much little time they had left on a test. In our own experience, we have quickened our pace on exams we have taken. We applied the same thought process to our Can't Test This test.

Other variables that we found in our study may have influenced the results. One extraneous variable was not using the same confederate throughout the experiment. A second variable was noise level outside of the lab B that could not be controlled. People in the main lab of Y105 were extremely loud when studying, talking, or waiting. One of

our participants commented on how gross it was to hear the bathroom stall being flushed above our lab room. That was obviously distracting to our participants because it had occurred a couple times during a few of our tests. The lighting in the room was not ideal for test taking. After a while of giving tests, our eyes were exhausted.

After giving the surveys after each test, we noticed that we should have asked a couple of more questions relating to the independent variables of time warning and the confederate. We were unable to change our survey, and still have enough participants if we would have done a pilot test, because of the time we had to perform our experiment due to our own scheduling conflicts as well as deadlines in the class.

Due to the small sample size and taking a test with only one person there was not enough information to conclude which test taking environment is best. Those interested in the topic would have been advised to also examine the actual classroom environment, as well as testing alone, or with one confederate as a test taker in a classroom setting rather than in a small lab setting. Other suggestions were to come up with a way to motivate participants to want to do well on the exam, give participants an actual anxiety test either before or after the standardized test.

References

Brewer, T. (2002). Test-taking anxiety among nursing & general college students. *Journal of Psychosocial Nursing & Mental Health Services, 50* (4). Retrieved October 7, 2008, from Proquest Psychology Journals database.

ACT test practice questions-Help your ACT exam score with free ACT test preparation. Retrieved October 7, 2008 from http://www.testprepreview.com/act_practice.htm.

Hancock, D. R. (2001). Effects of test anxiety and evaluative threat on students' achievement and motivation. *The Journal of Educational Research, 94,* 284-291. Retrieved November 12, 2008, from Proquest database.

Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research, 5,* 69-73. Retrieved October 7, 2008, from Proquest Psychology Journals database.

Musch, J. & Broder, A. (1999). Test anxiety versus academic skills: A comparison of two alternative models for predicting performance in a statistics exam. *British Journal of Educational Psychology, 69,* 105-117. Retrieved October 7, 2008, from Proquest Psychology Journals database.

Pashea, Z. A. (2008). *Does time distract?* Unpublished manuscript, Lindenwood University at St. Charles, MO.

Schmit, M. J., & Ryan, A. M. (1997). Applicant withdrawal: The role of test-taking attitudes and racial differences. *Personnel Psychology, 50* (4). Retrieved October 7, 2008, from Proquest Psychology Journals database.

Sud, A. & Kumar, S. (2006). Dysfunctional career thoughts, achievement motivation, and test anxiety among university students. *Pakistan Journal of Psychological Research, 21,* 41-52. Retrieved October 7, 2008, from Proquest Psychology Journals database.

Tsui, J. M., & Mazzocco, M. M. M. (2007). Effects of math anxiety and perfectionism of timed versus untimed math testing in mathematically gifted sixth graders. *Roeper Review, 40* (11). Retrieved October 7, 2008, from Proquest Psychology Journals database.

Whitaker Sena, J. D., Lowe, P. A., & Lee, S. W. (2007). Significant predictors of test anxiety among students with and without learning disabilities. *Journal of Learning Disabilities, 40*(11). Retrieved October 7, 2008, from Proquest Psychology Journals database.

Author Note

The authors wished to thank their fellow classmates in helping them review their methodology and research paper. A special appreciation was noted to Dr. Nohara-LeClair for her helpful ideas, revision, and knowledge with SPSS and conducting research. These researchers were proud to work on such a cooperative project with such great participants. A couple of the researchers were considering furthering their understanding of research methods by taking a senior research project class. For readers who were interested in learning more about the research and results, the researchers were able to be reached via email at the following email addresses: jaz458@lionmail.lindenwood.edu, Jamie Zagar; bmj496@lionmail.lindenwood.edu, Brian Judd; and dcm152@lionmail.lindenwood.edu, Danielle Merli.

Appendix A

Can't Test This!

Grammar

1. Everyone in the bank-including the manager and the tellers, ran to the door when the fire alarm rang.

A. tellers, ran

B. tellers:ran

C. tellers, had run

D. tellers-ran

E. tellers' ran"

2. After the hurricane, uprooted trees were laying all over the ground.

A. were laying

B. lying

C. were lying

D. were laid

E. was laid

3. The fact that boxing is known to cause head injuries and brain damage should lead us to inform the public and push for a ban on boxing.

A. should lead us to inform

B. could lead us to inform

C. should of led us to inform

D. will lead us to inform

E. should have led us to inform,

4. *The Diary of Anne Frank* showed a young girl's courage during two years of hiding.

A. showed a young girl's courage

B. shows a young girl's courage

C. did show a young girls courage

D. has shown a young girl's courage

E. showed a young girl's courage

5. In August my parents will be married for twenty-five years.

A. will be married for twenty-five years.

B. shall have been married for twenty-five years.

C. will have been married for twenty-five years.

D. will be married for twenty five years.

E. will have married for twenty-five years.

Math

1. Sarah is twice as old as her youngest brother. If the difference between their ages is 15 years. How old is her youngest brother?

A. 10

B. 15

C. 20

D. 25

E. 30

2. Which of the following fractions is equal to 5/6?

A. 20/30

B. 15/24

C. 25/30

D. 40/54

E. 2/7

3. If 3x=6x-15 then x + 8=

A. 5

B. 10

C. 11

D. 12

E. 13

4. The number of milliliters in 1 liter is

A. 10,000

B. 1,000

C. 0.1

D. 0.01

E. 0.001

5. A hockey team won 6 games and lost 8. What is the ratio of wins to number of games?

A. 6/8

B. 8/6

C. 3/7

D. 8/14

E. 6/7

Science

1. When the chromosomes line up in mitosis this is known as which phase?

A. Telophase

B. Anaphase

C. Metaphase

D. Prophase

2. Which of the following is not considered a characteristic or property of a gas?

A. Volume

B. Mass

C. Pressure

D. Particles

3. Organs repair themselves through a process of?

A. Meiosis

B. Mitosis

C. Cellular differentiation

D. Transformation

4. Litmus paper that is blue will turn/stay _____ in the presence of a strong base.

A. Orange

B. Red

C. Blue

D. Green

5. The first American to win a Nobel Prize was _____ for measuring the speed of light.

A. Albert Einstein

B. Albert Michelson

C. Grimaldi

D. Thomas Young

Answers

English

1. D
2. C
3. A
4. B
5. C

Math

1. B
2. C
3. E
4. B
5. C

Science

1. C
2. D
3. B
4. C
5. B

Appendix B

Survey Says

SUBJECT ID NUMBER:_____(Assigned by Researcher)

1. What is your cumulative GPA? _____
2. Are you a native speaker of English?_____
3. What school subject do you prefer?
    a. Grammar
    b. Math
    c. Science
4. How confident are you with your test score?
    a. Very confident
    b. Somewhat confident
    c. Not Confident
5. On a scale from 1 to 5, how would you rate your stress level (1 is very low and 5 is very high)?: _____

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about my personal experience taking tests, and I will participate in a timed test. To the best of my knowledge, I do not have any anxieties or opposition with taking a timed test with another test taker. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date:_____

(Signature of participant)

_____ Date:_____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers
Brian Judd (714)402-8788
Danielle Merli (618)779-4098
Jamie Zagar (618)401-1063

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636)949-4371
mnohara-leclair@lindenwood.edu

Appendix D

Feedback Letter

Thank you for participating in our study. The questionnaire was used in order to determine if being under pressure with another test taker or to be given a warning time would affect your performance on your test. This experiment was conducted in order to determine people's ability to perform better on test. There were four different participant groups in the study. Group one was not given a time warning and will not be taking the test with another test taker. Group two was given a time warning at one minute and 30 seconds. Group three took the test with another test taker. Group four was given a time warning at one minute and 30 seconds and will be in the presence of another test taker. We predicted that participants that were given a time warning and having another test taker in the room would not have as many correct answers on the standardized test. Participants that were not given a time warning and did the test alone, without another test taker in the room, would perform the best on the standardized test. All participants who have a higher GPA would perform better on the timed test than those participants who have a lower GPA.

Please note that we are not interested in your individual result; rather, we are only interested in the results of a large group of test takers, of which you are now a part of. No identifying information about you will be associated with any of the finding.

If you have any questions or concerns regarding any portion of this study please do not hesitate to bring them up now or in the future. Our information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:
Danielle Merli 618-779-4098 dcm152@lionmail.lindenwood.edu
Brian Judd 714-402-8788 bmj496@lionmail.lindenwood.edu
Jamie Zagar 618-401-1063 jaz458@lionmail.lindenwood.edu

Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 mnohara-leclair@lindenwood.edu

Gender Strength Implications and its Effects on Task Performance

Chelsea Schumacher

Throughout the history of research, there has been an immense interest regarding gender differences. Not only have variations in gender been observed through various social and physiological factors, but through cognitive factors as well. When reviewing previous research studies, it is evident that gender variations exist even when performing simple memory tasks. In the present study, the experimenter investigated whether implying opposing gender strength would have an effect on recall test performance. It was hypothesized that an individual would be motivated to perform more accurately on a recall test when opposing gender strength implications were introduced. When analyzing the results of the study, however, no significance was found, indicating that gender strength implications have no valid effect on task performance.

Throughout the history of research, there has been an immense interest regarding gender differences. Not only have variations in gender been observed through various social and physiological factors, but through cognitive factors as well. When reviewing previous research studies, it is evident that motivation may be one cognitive factor in which gender similarities and differences exist. Distinctions between each genders application of motivation seem to be particularly interesting when observing the effects that opposing-gender strength implications have on the performance of a specific task.

Historically, research regarding gender differences in memory tasks has failed to display reliable findings (Maccoby & Jacklin, 1974). Recent research, however, has

found significant results, discovering that women tend to have an advantage over men in various memory tasks (Lindholm & Christianson, 1998).

Other studies, however, have demonstrated that women tend to perform worse on memory tasks than men whenever social comparison is introduced (Huguet & Monteil, 1995). In Huguet and Monteil's study, female and male participants took part in a cognitive-perceptual task while anticipating or not social comparisons with other peers. During this study, participants were seated in a room and were instructed to take part in a complex memory test. The control group was told that their scores on the test would remain confidential, while the experimental group was told that their scores on the test would later be posted outside on the bulletin board for others to view. When analyzing the results of their study, Huguet and Monteil's hypothesis was indeed supported. Not only did the experimenters find that individuals self evaluations of their scores can affect how they perform on a task, but that task performance itself can also be affected by gender motivations or norms in social comparison situations. During this study, Huguet and Monteil also discovered that males' performance on memory tasks were enhanced when social comparison was anticipated, while females performed poorer when social comparison was expected to occur.

In a study carried out by Daly, Salters and Burns (1998), gender differences in recall ability were examined. In this study, Daly et al. investigated whether task preference had an effect on a genders task performance. When conducting the study, Daly et al. had young male and female participants read one of three stories, either containing a male protagonist, a female protagonist or a story that contained gender role-reversal characteristics. After reading one of the three stories, participants were asked to

recall as much from the story as they could remember. When analyzing the results from the study, Daly et al. found some very interesting results. The results indicated that most of the participants' scores varied due to the story type differences over individual differences. For example, Daly et al discovered that young male participants performed more accurately on the story containing a male protagonist, whereas young female participants performed more accurately on the story containing a female protagonist and the story in which gender role-reversal characteristics existed. When analyzing the results of Daly et al.'s study, it is evident that task performance may be influenced by an individual's preference of the selected task. Therefore, when looking at previous research implying that women are stronger in their recall capabilities than men, it may be due to the fact that women enjoy recall tasks more than men.

When reviewing gender differences in everyday memory tasks, Herrmann, Crawford and Holdsworth (1992) found some very interesting results. In one of two studies conducted by Herrmann et al., men and women's recall abilities of a shopping list and travel directions were compared. In this study, Herrmann et al. hypothesized that women would be more likely to perform more accurately on the shopping list task, whereas men would be more likely to perform more accurately on the directional task. When analyzing the results of the study, it was found that Herrmann et al.'s hypothesis was supported. Not only did women perform better on the shopping list recall task, but men performed better on the directional recall test as well. Therefore, it is evident that gender recall differences may only be present when introducing social gender norms.

In Herrmann et al.'s second study, male and female oriented labels were added onto the same shopping and directional recall lists. In this study, Herrmann et al. (1992)

produced a set of neutral directions and labeled it as either making a shirt or a workbench, and took a neutral list of words and labeled it as either a shopping or hardware list. By doing this, Herrmann et al. was attempting to see if opposing gender cues would have an effect on a participant's task performance. When analyzing the results of the study, Herrmann et al.'s hypothesis was once again supported. Not only was it found that women participants performed more accurately on the female-oriented recall tasks, but it was also found that male participants performed more accurately on the male-oriented tasks. Therefore, when reviewing this study, it is evident that gender cues may indeed have an effect on participant's task performance due to an individual's motivation and skill level.

Recent research has explored the notion that motivation plays a significant role on task performance when implying opposing-gender strength. According to Colley, Ball, Kirby, Harvey and Vingelen (2002), gender-related motivation can not only be displayed through intellectual ability tests but through common memory lists as well. In the Colley et al. study, participants were observed to see whether instructions that implied opposing-gender strength would have a negative effect on participants' recall performance abilities. When the study was conducted, participants were divided into one of three groups and were either given (1) instructions that indicated better recall performance by men, (2) instructions that indicated better recall performance by women, or (3) a neutral version that contained no gender information. After receiving the instructions, participants were to then take part in a 16 word recall test, in which they had 45 seconds to attempt to memorize as many words as possible. Although Colley et al. hypothesized that participants who were given instructions implying opposing-gender strength would

perform worse than those who received a neutral version, their findings were contradictory. In fact, Colley et al. found that when no other gender implications existed, both men and women performed more accurately on the recall test when told that the task favored the opposite sex.

When conducting my own research based on gender motivation, I decided to replicate part of the Herrmann et al. (1992) and the Colley et al. (2002) studies. Not only did I utilize the same recall test that was applied in Herrmann and Colley's studies, but I also adapted the time limits in which they used for the recall test. My study was more similar to Colley's study, however, due to the fact that I chose to use a similar instruction format implying opposing gender strength. Although my study followed the same format as Herrmann and Colley's studies, my hypothesis significantly varied. While Herrmann et al. and Colley et al. hypothesized that participants would be motivated to perform more accurately on tasks identifiable with their own gender, I had a different theory. In my study, I hypothesized that participants who were read an instruction sheet implying better performance by the opposing sex would be motivated to perform more accurately on the provided recall test than participants who received no specific gender information.

Method

Participants

In order to conduct the proposed study, college level students from Lindenwood University were recruited using the Human Subject Pool. The Human Subject Pool is a means through which students enrolled in entry level Psychology, Sociology and Anthropology classes are recruited in order to gain extra credit points in their classes. Students enrolled in these classes are only allowed to participate in the same experiment

once, allowing a researcher's subject matter to remain consistent and un-biased. A total of 79 students participated in this study, with 40 participants being in the experimental group and 39 participants being in the control group. Fifty-two women and twenty-seven men participated in the study.

Materials

The chief component utilized in this study was a provided recall test containing 16 words (see Appendix A). Some of the additional materials that were used in the experiment ranged from writing utensils, a stop watch and informational documents. The room in which the study was conducted was located on Lindenwood University campus in Young Hall, room 105A. The room itself was adequately lighted and consisted of a computer desk with a network computer, 2 chairs, 1 desk and a rolling stand containing a television set.

Procedure

For the experiment, participants were recruited through the Lindenwood Human Subject Pool. Each participant arrived at their specified time on the days of October 16, 21, 23, 28, 30 and November 4 in Young Hall, room 105A. Before conducting the study, two copies of an informed consent form (see Appendix B) were distributed to the participant to read and sign, allowing him/her to personally retain one copy while also allowing the researcher to have a copy for reference as well. An anonymous questionnaire (see Appendix C) was then given to the participant in order to inquire about his/her gender, grade level and English comprehension level. After completion, the experimenter then read aloud one of two instruction versions, either stating (1) that men/women perform better than the opposing sex on recall tests (see Appendix D & E) or

(2) that no gender differences exist when looking at recall test performance (see Appendix F). The instruction sheets also notified the participant that he/she was to take part in a 45 second recall test consisting of 16 neutral words (Herrmann et al., 1992). After the participant fully understood the given instructions, the experimenter then handed him/her the recall test and started the timer. When the 45 seconds passed, the experimenter removed the list and gave the participant a blank sheet of paper while asking him/her to record as many words from the list in a 2 minute period. After completion, the experimenter took the participant's sheet and thoroughly debriefed the participant while giving him/her a feedback letter (see Appendix G) containing contact information of experimenter. The participant was then thanked for his/her time, and was told to contact the experimenter if any questions or inquiries about the study existed.

Results

In my study, I hypothesized that participants who were read an instruction sheet implying better performance by the opposing sex would be motivated to perform more accurately on the provided recall test than participants who received no specific gender information. Therefore, in order to analyze my results, an independent samples t-test was utilized. When comparing the experimental and the control group's results, it was found that no significance existed, and I therefore failed to reject the null hypothesis. I also analyzed men and women participant's results separately in order to determine if gender differences exist in task performance when opposing gender strength implications are introduced. When analyzing those results, it was found that no significance existed, and I therefore failed to reject the null hypothesis in those two situations as well. When comparing the combined experimental ($M = 9.62$; $SD = 2.192$) and control ($M = 9.13$;

SD = 2.494) group's results, it was found that $t_{(77)} = .941$, $p>.05$. When analyzing women participant's results separately, the experimental (M = 9.81; SD = 2.209) and control (M = 9.65; SD = 2.279) group's results found that $t_{(50)} = .247$, $p>.05$. When analyzing men participant's results separately, the experimental (M = 9.29; SD = 2.199) and control (M = 8.08; SD = 2.660) group's results found that $t_{(25)} = .291$, $p>.05$.

Discussion

When reviewing the results of my study, it is evident that my study did not find significance, even when analyzing male and female participants' results separately. Therefore, it can be assumed that opposing gender strength implications may not have an effect on task performance, at least when taking part in a recall test. Due to this, there is no evidence backing the notion that motivation plays a factor in participants recall ability when implying opposing gender strength. Although this was somewhat disappointing, it is pleasant to know that opposing gender strength implications may not have an effect on today's society.

When comparing the means of the two groups in the study, it was very interesting to see how close the two mean test scores were. The mean test scores were even closer when analyzing female participants' results. This seems to correspond with Lindholm and Christianson's (1998) findings, stating that women tend to be stronger in their memory capabilities than men. These findings also may be due to Daly et al.'s (1998) results, implying that women may perform more accurately on recall tests due to the fact that they enjoy taking part in recall activities over men. Although these results go along with certain studies, they seem to contradict others as well. For example, these results seem to go against Huguet and Monteil's (1995) study due to the fact that women

performed more accurately on the recall test when told that males have stronger recall abilities. Therefore, it does not seem as if social comparison hindered their results, and in fact, may have increased it.

When analyzing the mean test scores for male participants, however, the mean scores seemed to vary significantly more than the other two tested conditions. Although there was no significance when analyzing the male scores separately, this could have been due to the lack of male participants who took part in the study. While I had an abundance of female participants (n=52) take part in the study, I had very few male participants (n=27) involved in the study. When attempting to analyze men in the experimental condition seemed to perform more accurately than men in the neutral condition, it is evident that Huguet and Monteil's (1995) findings may have an explanation. For example, Huguet and Monteil found that men tend to do better in social comparison situations. Therefore, it seems that men may be more competitive than women in situations where they are being compared to another group of individuals.

When looking back, it is evident that several things could have been altered to possibly find significance in my study. The first thing I would have changed is the way participants received the instruction sheet. When conducting the study, I read the instruction sheet aloud to each participant, possibly altering my voice each time it was read. In order to prevent this, I should have recorded the instructions on a tape recorder to play to the participant. I believe that could have eliminated some error in the study. Another thing I would have changed in the study is the time limit for recalling the words from the list. Instead of using two minutes for participants to write down the words that they remembered, I should have created a three-minute limit in which they could stop at

any time throughout. This would have allowed me to record the time in which each participant chose to end the test, hopefully showing that those in the experimental condition were motivated to spend more time on the test than those in the control condition.

References

Colley, A., Ball, J., Kirby, N., Harvey, R., & Vingelen, I. (2002). Gender-linked differences in everyday memory test performance: Effort makes the difference. *Sex Roles, 47*, 577-582.

Daly, P., Salters, J., & Burns, C. (1998). Gender and task interaction: Instant and delayed recall of three story types. *Educational Review, 50*, 269-275.

Herrmann, D., Crawford, M,. & Holdsworth, M. (1992). Gender-linked memory differences in everyday memory performance. *British Journal of Psychology, 83,* 221-231.

Huguet, P., & Monteil, J. (1995). The influence of social comparison with less fortunate others on task performance: The role of gender motivations or appropriate norms. *Sex Roles, 33,* 11-12.

Lindholm, T., & Christianson, S. (1998). Gender effects in eyewitness accounts of violent crime. *Psychology, Crime and Law, 4,* 323-339.

Maccoby, E., & Jacklin, C. (1974). *The psychology of sex differences.* Stanford, CA: Stanford University Press.

Appendix A

RECALL TEST

(Adapted from 1992 Herrmann Study)

1. Salt
2. Dye
3. Wax
4. Spatula
5. Brush
6. Hose
7. Oil
8. Chips
9. Glue
10. Nuts
11. Water
12. Gum
13. Seeds
14. Charcoal
15. Mop
16. Detergent

Appendix B

INFORMED CONSENT FORM

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire inquiring about my gender, grade level and English fluency, and will participate in a timed recall test. To the best of my knowledge, I do not have any anxiety issues whenever dealing with the stress of timed tests. I also understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the HSP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____
(Signature of participant)

Chelsea Schumacher Date: **10/30/08**
(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:
Chelsea Schumacher
618-910-8000
cs106@lionmail.lindenwood.edu

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
mnohara-leclair@lindenwood.edu

Appendix C

QUESTIONNAIRE

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1) Gender: MALE FEMALE

2) Grade Level: FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER

3) Overall, how comfortable do you consider yourself to be with the English language (with 1 being least comfortable to 5 being most comfortable)?

1 2 3 4 5

Appendix D

INSTRUCTION SHEET (#1 – Male oriented)

TO BE READ ALOUD TO PARTICIPANT

Thank you for your participation in this recall study. As you may know, recall is a common method used in order to measure certain memory capabilities. Although there are different variations when dealing with recall, a method known as free recall will be applied today in which no recall clues will be given. Free recall has been chosen for use in this study order to observe certain gender variations that exist when utilizing this method. Thus far, it has been found that men tend to be stronger in their free recall capabilities than women.

In this study, you will be shown a list of 16 items which may be recalled in any order. When you begin, the experimenter will give you the list in which you will have 45 seconds to memorize as many of the words as you can. When the 45 seconds has passed, the experimenter will then give you a blank sheet of paper in which you will have 2 minutes to write down all of the words that you remembered from the previous list.

Appendix E

INSTRUCTION SHEET (#2 – Female oriented)

TO BE READ ALOUD TO PARTICIPANT

Thank you for your participation in this recall study. As you may know, recall is a common method used in order to measure certain memory capabilities. Although there are different variations when dealing with recall, a method known as free recall will be applied today in which no recall clues will be given. Free recall has been chosen for use in this study in order to observe certain gender variations that exist when utilizing this method. Thus far, it has been found that women tend to be stronger in their free recall capabilities than men.

In this study, you will be shown a list of 16 items which may be recalled in any order. When you begin, the experimenter will give you the list in which you will have 45 seconds to memorize as many of the words as you can. When the 45 seconds has passed, the experimenter will then give you a blank sheet of paper in which you will have 2 minutes to write down all of the words that you remembered from the previous list.

Appendix F

INSTRUCTION SHEET (#3 - Neutral)

TO BE READ ALOUD TO PARTICIPANT

Thank you for your participation in this recall study. As you may know, recall is a common method used in order to measure certain memory capabilities. Although there are different variations when dealing with recall, a method known as free recall will be applied today in which no recall clues will be given. Free recall has been chosen for use in this study order to observe certain gender variations that exist when utilizing this method. Thus far, it has been found that no sex difference exists in free recall capabilities.

In this study, you will be shown a list of 16 items which may be recalled in any order. When you begin, the experimenter will give you the list in which you will have 45 seconds to memorize as many of the words as you can. When the 45 seconds has passed, the experimenter will then give you a blank sheet of paper in which you will have 2 minutes to write down all of the words that you remembered from the previous list.

Appendix G

FEEDBACK LETTER

Thank you for participating in my study. The given questionnaire was used in order to gain some basic demographic information on all participants, including an individual's gender, class level and English fluency. The given recall test was utilized in order to attempt to identify whether implied gender strength had an effect on an individual's overall test performance. In this study, the hypothesis that I was interested in was the notion that participants who were read an instruction sheet indicating better performance by the opposing gender in recall tests would be motivated to perform more accurately on the provided recall test. Due to this hypothesis, deception was utilized in my study in order to determine whether implied gender strength would have an effect on the opposing gender's recall ability.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of participants, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:
Chelsea Schumacher 618-910-8000
cs106@lionmail.lindenwood.edu

Supervisor:
Dr. Michiko Nohara-LeClair mnohara-leclair@lindenwood.edu

Special Feature:

Senior Research Project Papers

Implicit and Explicit Self-Esteem and their Correlations with Codependency

Rachel N. Rogers

The present study examined the correlations between implicit and explicit self-esteem and codependency. Implicit self-esteem involves automatic, over-learned self-evaluations and explicit self-esteem refers to conscious feelings of one's self. It was predicted that participants who scored higher on the implicit self-esteem measure would score lower on the codependency scale, regardless of scores on the explicit self-esteem scale. Participants engaged in a timed task involving me/not-me primes and positive/negative words to measure implicit self-esteem. The Rosenberg Self-Esteem Scale and the Spann-Fischer Codependency Scale were used to measure explicit self-esteem and codependency, respectively. Should a strong negative correlation be found between codependency and either of the measures of self-esteem, the information could potentially be applied to creating effective therapy programs for codependency.

The concept of codependency is a rather ambiguous one. Originally, codependency was solely referred to when describing the relationship between an individual and their chemically dependent loved one (Mental Health America, 2006). The partner without the addiction was thought to "protect" the addicted and therefore, indirectly enable the addiction (Cretser & Lombardo, 1999). Essentially, the individual was considered to be *dependent* on their partner's chemical *dependence* because it meant their partner needed someone to take care of them—hence the term *codependence*. However, the mainstream idea of codependency is moving away from this narrow

definition to a broader ideology. Cretser and Lombardo reported significant findings that underclass women who were children of alcoholics actually had lower codependency scores than other portions of the tested population. This finding serves as a sampling of the support for moving away from the original definition of codependency to a more all-encompassing one—that is, it does not solely involve family members of substance abusers. It is necessary to point out, however, that relatives of addicts do make up a sizable portion of the codependent population—which is why therapy groups such as Adult Children of Alcoholics are still in practice.

Currently the concept of codependency has expanded to consider two prevalent approaches. One approach looks at codependency as a personality syndrome in which a non-addicted partner brings unhealthy trait patterns and ways of thinking/acting to the relationship (Wright & Wright, 1991). Wright and Wright list the following as characteristics of the codependency syndrome: a need to be needed and in control; low self-esteem; fear of abandonment; self-sacrificing; denial; no clear boundaries between self and partner(s); and an exaggerated desire for approval from others. The other approach regards codependency as the adjustment or coping efforts of a "normal"/healthy individual to a difficult relationship or life situation (Wright & Wright). Wells, Glickauf-Hughes, and Jones (1999) provided support for regarding codependency as a syndrome that reflects one's views of one's self. Whereas Wright and Wright held that a person's responses to particular circumstances may be more relevant to codependency.

Wright and Wright (1991, 1999) introduced the idea of two types of codependency: endogynous and exogenous. Wright and Wright (1991) believe the two approaches listed above could be considered to be "complementary rather than

contradictory" (p. 452). Wright and Wright used the term endogynous codependency to stand for the personality syndrome approach and exogenous codependency for the interactionist (normal person adjusting to difficult situation) approach. The idea here is that there is not one definitive approach, but two very real possibilities for the presence of codependent relating—circumstantial or intrapersonal (Wright & Wright, 1991). Several researchers have found support for considering codependency as a combination of both approaches—thus, making the definition of codependency even broader (Cretser & Lombardo, 1999; Lindley & Giordano, 1999; Wright & Wright, 1991, 1999). Taking into account this broad view, the website for Co-Dependents Anonymous (CODA, 2008) does not give a formal definition of codependency but instead lists a number of characteristics and patterns often expressed in codependent relating. Such patterns include: denial patterns, control patterns, low self-esteem patterns, and compliance patterns (CODA).

The present study considers codependency to fall into the complementary endogynous/exogenous approach. However, regardless of how the codependent relating came about, codependency for the endogynous or exogenous individual seems to have overlapping characteristics (during the time of the codependent relating). For example, if a "normal" individual's situation is causing her to adjust in codependent ways, she will display characteristics typical of the codependent syndrome: a focus on protecting the other person, putting that person before herself, and eventually she may come to derive particular meaning or gratification only from that particular type of relationship (in which she is needed). Lindley and Giordano (1999) state the following as generally accepted ideas behind codependency: the codependent has an intense focus on trying to control the

happenings of those around him; seeks fulfillment through controlling relationships; and strongly feels a need for approval of others. The present study uses the above as the operational definition of codependency and has employed the use of the Spann-Fischer Scale (Fischer, Spann, & Crawford, 1991) as the measure for assessing codependency. Lindley and Giordano specify the Spann-Fischer Scale as focusing on three characteristics of codependency: extreme focus outside of self; lack of open expression of feelings; and attempts to find a self-worth or purpose from relationships. Wright and Wright (1991) reported the Spann-Fischer Codependency Scale as having high internal and test-retest reliability.

Self-esteem has been a prominent research topic for the field of psychology as a whole. Kernis (2003) stated, "Self-esteem is an important psychological construct because it is a central component of individuals' daily experience, it refers to the way that people feel about themselves, which reflects and affects their ongoing transactions with their environment and the people they encounter in it" (p.1). The general impression is that self-esteem is simply a person's beliefs about their self-worth. This notion covers the gist of self-esteem as a construct; however, researchers have begun looking at possible subtypes of self-esteem. The two subtypes of interest here are termed implicit and explicit self-esteem. When we think of self-esteem, we generally think of explicit self-esteem, or what a person consciously feels about him/herself. Implicit self-esteem refers to more of an automatic, over-learned, evaluation of the self—in other words, it can be largely unconscious. The idea behind subtypes of self-esteem suggests that there may be discrepancies between an individual's implicit and explicit self-esteem (although, they may be congruent as well).

Kernis (2003) suggests that there may be a difference between high self-esteem and optimal self-esteem—depending on the specific combination of implicit and explicit self-esteem for an individual. For example, a person may evaluate their self-worth as being high (high explicit self-esteem) but have negative feelings of self-worth of which they may not be aware (low implicit self-esteem); Kernis considers this discrepancy to be of importance. Kernis states that having a low implicit self-esteem may in fact undermine the high explicit self-esteem and, therefore, produce a more unstable global self-worth. Several studies have examined the discrepancies between implicit and explicit self-esteem and their relationship to various characteristics. Zeigler-Hill and Terry (2007) suggested that an individual with discrepant low self-esteem (low explicit but high implicit) may possess a glimmer of hope or optimism, which is atypical to the general concept of low self-esteem. The researchers reported findings that individuals with discrepant low self-esteem actually had higher levels of maladaptive and adaptive perfectionism (Zeigler-Hill & Terry). The assumption here is that despite their low explicit self-esteem, they were hopeful enough to still strive for perfection—which means the high implicit self-esteem greatly impacted the actual behaviors of the individual. Another study conducted by Schroder-Abe, Rudolph, and Schutz (2007) suggested that high implicit self-esteem was actually a disadvantage for individuals with low explicit self-esteem because it was related to more health problems. Schroder-Abe, Rudolph, and Schutz also found discrepancies between explicit and implicit self-esteem to be related to maladaptive anger coping and depressive attributional style.

The present study utilizes the popular Rosenberg Self-Esteem Scale (Rosenberg, 1965) to measure explicit self-esteem because it is a straightforward list of I-statements

which pretty clearly represent what a person consciously thinks of their self-worth. Because implicit self-esteem is a subjective and recent measure, there has been quite a bit of controversy over the scientific assessment of it. Some researchers have used a measure involving the rating of letters in the alphabet—which seems to be more a measure of familiarity/exposure bias than implicit self-esteem. Other researchers have employed the use of a computer-based, timed task involving self and non-self primes with positive and negative stimuli to see which words participants would put with what prime category (Swanson & Greenwald, 2001). This measure is known as the self-esteem version of the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998) and is considered to most reliably estimate implicit cognitions because the stimuli is presented in such a quick fashion that the participant does not have time to consciously make links during the task. Teachman and Brownell (2001) created a paper-pencil version of the Implicit Association Test (IAT) to examine implicit biases among health professionals. Teachman and Brownell suggested that the paper-pencil version has been found to produce comparable results as the computerized version. Therefore, a modified paper-pencil version of the Implicit Association Test was created for the present study.

As briefly mentioned above, low self-esteem has been considered a characteristic of a codependent individual. Wells, Glickauf-Hughes, and Jones (1999) reported findings of a codependent individual being prone to feelings of shame and low self-esteem. Lindley and Giordano (1999) found self-confidence to be the strongest predictor (out of autonomy, age, race, and soliciting emotional support from others) of codependency. There was a negative correlation between self-confidence and codependency—where higher self-confidence was related to lower codependency scores

(Lindley & Giordano). It has been made evident that there is a relationship between codependency and self-esteem (specifically a negative correlation), however, these studies have not taken into consideration the subtypes of self-esteem.

The present study is aimed at examining the relationship between the two subtypes of self-esteem and codependency. The hypothesis is that participants who score higher on the implicit self-esteem measure will score lower on the codependency scale, regardless of scores on the explicit self-esteem scale. Again, codependency has been found to be related to low explicit self-esteem, but perhaps it is more accurately related to a discrepant low self-esteem (low explicit, high implicit). It would seem as though an individual would need some level of high self-esteem in order for them to feel as though they are capable of controlling someone or some situation. Or in another way, perhaps taking care of someone makes the codependent feel better about himself at some level (implicitly). The different combinations of implicit and explicit self-esteem and their effects on an individual's presented characteristics are important to study because efforts to raise self-esteem are solely focused on explicit self-esteem. If there are numerous consistent results showing the importance of implicit self-esteem, then it will prove important to research ways in which implicit self-esteem can be raised. Codependency within relationships was chosen for this study because in American (an individualistic) culture it is typically seen as a negative attribute. Should a strong negative correlation be found between codependency and either of the measures of self-esteem, the information could potentially be applied to creating effective therapy programs for codependency. Another interesting byproduct of the present study is to find out how similar or discrepant the two subtypes are in getting at people's self-esteem. Examining the relationship

between explicit and implicit self-esteem could make it possible to address the difference between high self-esteem and what may be deemed as "optimal" self-esteem, as suggested by Kernis (2003).

Method

Participants

Fifty-five undergraduate students were recruited through the Lindenwood University Human Subject Pool (HSP). These participants were enrolled in, and received bonus credit toward, one of the following classes: ANT 112, PSY 100, PSY 101, SOC 102, or SOC 214. Participants consisted of 25 men and 30 women. The ages of participants ranged from 18 to 24 years old.

Measures

The present study took place in a psychology lab of Young Hall at Lindenwood University. In the room were two chairs and a table. The following paper materials were used for the study (surveys will be described in more detail below): demographic questionnaire (see Appendix A), a timed practice task (see Appendix B), the test paper-pen timed implicit association task (see Appendix C), a survey about interpersonal relationships/codependency (see Appendix D), and a survey on explicit self-evaluations (see Appendix E). Pens were provided to participants to complete the study. A stop watch was used to keep time and indicate the stopping point for the practice and actual timed tasks. After data collection was completed, the Windows SPSS software was utilized to analyze the data.

Implicit Self-Esteem

The measure of implicit self-esteem was a modified paper-pencil version of the Implicit Association Test (Greenwald et al., 1998). This task involved using reaction time to assess automatic self-evaluations. The participant was given 2 worksheets (only one at a time) in which they had 20 seconds (per worksheet) to designate words as either being in the "me" or "not me" category by filling in the bubble under the category to the right or left side of the paper. The words chosen for this study included 10 positive and their 10 negative counterparts (e.g. "good" and "bad"). There were 2 different word lists (10 words long, with 5 positive and 5 negative on each list) used for this project—all participants received both lists but the way in which they received the lists and category arrangements (on right or left side) were different. Ultimately, there were four different IAT versions and four different ways in which the stimuli could be presented to participants. The four IAT versions were as follows: IAT 1 - "Me" on left with word list 1 (list 1 starts with "satisfied"); IAT 2 - "Me" on left with word list 2 (list 2 starts with "dishonorable"); IAT 3 - "Not me" on left with word list 1; and IAT 4 - "Not me" on left with word list 2. The purpose of creating four different sequence patterns was to prevent order effects. The four sequence groups were as follows: Group A participants received IAT 1 followed by IAT 4; Group B received IAT 2 followed by IAT 3; Group C received IAT 3 followed by IAT 2; and Group D received IAT 4 followed by IAT 1. To score the implicit scale, each positive trait word was given a score of 1 point and each negative trait word was given a score of -1. The scores could range from -5 (low implicit self-esteem) to 5 (high implicit self-esteem) because there were 5 positive and 5 negative words on each list. The researcher was particularly interested in the combined scores of

the two IAT's that each participant took. Therefore, combined scores could range from -10 to 10.

Explicit Self-Esteem

To assess explicit self-esteem, participants were asked to complete the 10 item Rosenberg Self-Esteem Scale (Rosenberg, 1965). In the present study, participants were instructed to circle whether they Strongly Agree, Agree, Disagree, or Strongly Disagree with the 10 general statements regarding their feelings about themselves. To score the Rosenberg scale, the researcher had to assign the answer choices the following points: SA=3, A=2, D=1, SD=0; noting that items 2, 5, 6, 8, and 9 were to be reverse scored, that is, SA=0, A=1, D=2, SD=3. Then, the researcher had to sum the scores for all 10 items to get a total that was representative of a person's self-esteem (the higher the score, the higher the self esteem). Scores could range from 0-30.

Codependency

The measure for relationship codependency was the Spann-Fischer Scale (Fischer, Spann, & Crawford, 1991). This scale consists of 16 questions regarding self-evaluations and interpersonal relationships which participants rate on a scale from 1-6 (Strongly Disagree=1, Moderately Disagree, Slightly Disagree, Slightly Agree, Moderately Agree, and Strongly Agree=6). To obtain a score for this scale, the researcher must first reverse the score for questions 5 and 7 and then sum all of the items (higher score = higher codependency). Scores could range from 16-96.

Procedure

The researcher first explained the informed consent process to the participant. Then, to start, participants took a brief demographic survey asking about their sex, age,

major, native language, and home country. Once participants completed the demographic survey, they were asked to work on the task measuring implicit self-esteem. In order to ensure the participant understood the task, a practice task was given (prior to the test measure) in which they were encouraged to be as accurate and quick as possible. The practice test had categories that had nothing to do with the present study (i.e. "bugs" and "flowers")—but, it was set up exactly like the test measure. Participants were then given the first worksheet of their actual implicit task and worked on that for 20 seconds. Next they received the second worksheet to complete the implicit task (in another 20 seconds). The researcher counterbalanced the order of the worksheets presented, arrangement of the "me" and "not me" categories, and which list went with which arrangement. Due to the counterbalancing, there were 4 ways in which the stimuli were presented. For example the first worksheet presented might have been any one of these: "me" on right with list 1, "me" on right with list 2, "me" on left with list 1, or "me" on left with list 2.

For the next measure, the participant was given the Rosenberg Self-Esteem Scale (Rosenberg, 1965) to complete. The final measure the participant took part in was the Spann-Fischer Codependency scale (Fischer & Spann, 1991). Every questionnaire had a spot for an ID number that the researcher randomly assigned to each participant in order to protect the participant from any identifying information being revealed. Also, the scores of the measures were not tallied until data collection was complete for all participants—so as to keep the individual information anonymous. Once tasks were completed, the participant received their receipt for extra credit for participation along with a feedback letter and chance to voice any questions that may have remained.

Finally, the researcher categorized and analyzed the correlations among the data using the SPSS software.

Results

Correlations

Three Pearson's correlations were conducted to investigate the research questions regarding the relationships among implicit self-esteem, explicit self-esteem, and codependency. The first correlation examined the relationship between the combined participant IAT scores (implicit self-esteem) and Rosenberg (explicit) Self-Esteem scores. The results yielded a Pearson's correlation coefficient of $r(55) = .498$, $p < .01$, two-tails. The second correlation conducted was between participants' explicit self-esteem scores and their codependency scores. This analysis demonstrated a significant relationship with $r(55) = -663$, $p < .01$, one-tail. The final correlational analysis, between implicit self-esteem scores and codependency scores, revealed a relationship of $r(55) = -.449$, $p < .01$, one-tail.

Descriptive Statistics

The sample size was 55, with 25 men and 30 women participating. Nineteen year olds were the largest number of participants, making up 39.7% of the total sample, while 25.5% of the participants were 18. There were a wide range of majors reported; psychology came in the top with 9 participants, or 16.4% of the sample, followed by 4 biology and 4 sports management majors (7.3% each). Eighty percent of the participants spoke English as their native language and 76.4% were from the United States. Spanish and Swedish were the next most common native languages, however both only making up 5.5% of the sample.

The mean score for the combined self-esteem IATs was M= 8.15 and the standard deviation was s.d.= 2.468. The majority of participants scored 9's (16 participants) and 10's (19 participants), while there was one extreme score of -2. For the explicit self-esteem measure, M= 22.24 and s.d.= 12.163. The mode score for explicit self-esteem was 19, with 10 participants having earned that score. The minimum explicit self-esteem score reported was a 12. Regarding codependency scores, M= 50.28 and s.d.= 12.163. The maximum codependency score was 76, while 29 was the minimum.

Other Analyses

A paired samples t-test was run to examine whether any discrepancies existed between the different versions of the implicit task and results were statistically non-significant. A Pearson's Chi-Square was conducted to see if there was a difference between the four sequence groups participants were assigned to and results were statistically non-significant. An independent samples t-test examining sex differences for codependency scores was statistically significant, $t(52) = -2.106$, $p < .05$. Finally, another independent samples t-test was conducted to examine sex differences for explicit self-esteem scores and it was statistically non-significant.

Discussion

The Pearson's correlation between the combined participant IAT scores and Rosenberg Self-Esteem scores showed a fairly strong positive relationship, demonstrating that implicit and explicit self-esteem do not substantially differ from one another. This might suggest that there really is no such distinction between implicit and explicit self-esteem—therefore, no such concept as implicit self-esteem. Before ruling out the concept of implicit self-esteem as obsolete it is important to continue research in the area.

Or perhaps, the IAT task given was not a true measure of implicit self-esteem. Due to resource limitations, the present study used a modified paper-pencil version of the computerized Implicit Association Test (Greenwald et al., 1998). Teachman and Brownell (2001) noted that paper-pencil versions had been found to produce comparable results as the computerized version which may not have been the case here. Perhaps the computerized version would be a more valid measure for implicit self-esteem. For example, Schroder-Abe, Rudolph, and Schutz (2007) used the computerized version of the self-esteem IAT and they found discrepancies between implicit and explicit self-esteem. The computerized version would be more effective in measuring automatic responses because the computer can time each response or set how much time each question appears.

The correlation between participants' explicit self-esteem scores and their codependency scores was strongly negatively related. This inverse relationship demonstrates that higher explicit self-esteem relates to lower codependency. The correlation between participants' implicit self-esteem scores and codependency scores was also negatively related, however lacking the strength of the previously mentioned correlation.

The correlational results do not fully support my hypothesis, as I predicted that high implicit self-esteem would relate to low codependency, regardless of high or low explicit self-esteem. A negative correlation between implicit self-esteem and codependency was found, however, the negative correlation between explicit self-esteem and codependency was stronger. Also, because there were no significant discrepancies found between implicit and explicit self-esteem, my hypothesis would be considered off

target. Perhaps no discrepancies were found because the sample size was so limited. Acquiring a much larger sample may offer more insights to the relationships among implicit and explicit self-esteem.

As the analysis indicated, the majority of participants scored 9's and 10's on the implicit task. This lack of variability brings up a couple of issues. Though I attempted to measure automatic responses, perhaps my time constraint was too generous. Generally, all the participants finished before the 20 seconds was up. Maybe a shorter time period would have been ideal. However, the concern was participants not finishing and therefore their data not being complete. Also, with the paper-pencil version, there was no way of telling how long the participants took for each word pairing. There seemed to be a bit of variety in how fast participants completed the task—with some finishing under 10 seconds and others taking right up to 20 seconds. This raises the question of whether all participants were following the instructions and going with their automatic responses. Also, when scoring the data, the researcher noticed a few partial markings under one particular category, but then a darker mark under the opposite category—showing that participants may not have been sticking with initial responses, but changing them to the more ideal response. Maybe, even under time constraints of 20 seconds, participants were trying to answer what they thought would look best (social desirability).

The analysis regarding sex differences for codependency scores demonstrated that men and women score differently scales of codependency. The results showed that women tend to score higher on codependency than men. This would make sense when you consider the stereotype that women are more focused on interpersonal relationships and men are more independent. Therefore, to maintain relationships women may be

"people-pleasers" moreso than men. Sex differences for explicit self-esteem scores were not found—implying that men and women tend to score relatively similar on such a measure.

The analyses conducted regarding sequence groups and IAT versions demonstrated that there were no substantial differences among the sequence groups and participants' scores on the implicit task. Therefore, the sequence method was consistent and the scores on the IATs can be considered reliable.

A primary implication of this study is that it be used as a foundation or stepping stone to guide other research in the area. This study also brings up the question of a "true" measure of implicit self-esteem. Aside from considering working with the computerized IAT, perhaps more research should be done in regards to new implicit measures. This study further demonstrates that self-esteem and codependency are negatively related; therefore, efforts at decreasing codependent tendencies should focus on raising self-esteem.

References

CoDependents Anonymous. (2008). Retrieved on October 20, 2008 from http://www.codependents.org/foundation-docs-patterns.php.

Cretser, G. A., & Lombardo, W. K. (1999). Examining codependency in a college population. *College Student Journal, 33,* 629-637.

Fischer, J. L., Spann L., & Crawford, D. (1991). Measuring codependency. *Alcoholism Treatment Quarterly, 8,* 87-100.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Kernis, M. H. (2003). Toward a conceptualization of optimal self-esteem. *Psychological Inquiry, 14*, 1-26.

Lindley, N. R., & Giordano, P. J. (1999). Codependency: Predictors and psychometric issues. *Journal of Clinical Psychology, 55*, 59-64.

Mental Health America. (2006). Retrieved on October 20, 2008 from http://www.nmha.org/go/codependency.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Schroder-Abe, M., Rudolph, A., & Schutz, A. (2007). High implicit self-esteem is not necessarily advantageous: Discrepancies between explicit and implicit self-esteem and their relationship with anger expression and psychological health. *European Journal of Personality, 21*, 319-339.

Swanson, J. E., & Greenwald, A. G. (2001). Using the implicit association test to investigate attitude-behavior consistency for stigmatized behavior. *Cognition & Emotion, 15*, 207-230.

Teachman, B. A., & Brownell, K. D. (2001). Implicit anti-fat bias among health professionals: Is anyone immune? *International Journal of Obesity, 25*, 1525-1531.

Wells, M., Glickauf-Hughes, C., & Jones, R. (1999). Codependency: A grass roots construct's relationship to shame-proneness, low self-esteem, and childhood parentification. *American Journal of Family Therapy, 27,* 63-71.

Wright, P. H., & Wright, K. D. (1991). Codependency: Addictive love, adjustive relating or both? *Contemporary Family Therapy, 13,* 435-454.

Wright, P. H., & Wright, K. D. (1999). The two faces of codependent relating: A research-based perspective. *Contemporary Family Therapy, 21,* 527-542.

Zeigler-Hill, V., & Terry, C. (2007). Perfectionism and explicit self-esteem: The moderating role of implicit self-esteem. *Self and Identity, 6,* 137-153.

Appendix A

Questionnaire

1) Circle one: MALE FEMALE

2) What is your age?

3) What is your college major?

4) What is your native language?

5) What country are you from?

Appendix B

Practice Task:

Choose **one** category for each word in the center of the page by checking or filling in the bubbles. You will have 20 seconds to complete this task. Please work quickly and be as ACCURATE as possible.

Flowers		Bugs
o	daisies	o
o	tulips	o
o	mosquitoes	o
o	roses	o
o	grasshopper	o
o	beetle	o
o	butterfly	o
o	lilies	o
o	dandelions	o
o	centipede	o

Appendix C

Me		**Not me**
o	satisfied	o
o	respectable	o
o	bad	o
o	talented	o
o	worthless	o
o	disappointed	o
o	competent	o
o	negative	o
o	success	o
o	insignificant	o

Not me		Me
o	dishonorable	o
o	failure	o
o	valuable	o
o	positive	o
o	discontented	o
o	unskilled	o
o	proud	o
o	important	o
o	incapable	o
o	good	o

Not Me		Me
o	satisfied	o
o	respectable	o
o	bad	o
o	talented	o
o	worthless	o
o	disappointed	o
o	competent	o
o	negative	o
o	success	o
o	insignificant	o

Me		**Not me**
o	dishonorable	o
o	failure	o
o	valuable	o
o	positive	o
o	discontented	o
o	unskilled	o
o	proud	o
o	important	o
o	incapable	o
o	good	o

Appendix D

Spann-Fischer Scale: Read the following statements and place the number in the spaces provided that best describes you according to the following list: 1 Strongly Disagree; 2 Moderately Disagree; 3 Slightly Disagree; 4 Slightly Agree; 5 Moderately Agree; 6 Strongly Agree.

_____ 1. It is hard for me to make decisions.

_____ 2. It is hard for me to say "no."

_____ 3. It is hard for me to accept compliments graciously.

_____ 4. Sometimes I almost feel bored or empty if I don't have problems to focus on.

_____ 5. I usually *do not* do things for other people that they are capable of doing for themselves.

_____ 6. When I do something nice for myself I usually feel guilty.

_____ 7. I *do not* worry very much.

_____ 8. I tell myself that things will get better when the people in my life change what they are doing.

_____ 9. I seem to have relationships where I am always there for them but they are rarely there for me.

_____ 10. Sometimes I get focused on one person to the extent of neglecting other relationships and responsibilities.

_____ 11. I seem to get into relationships that are painful for me.

_____ 12. I don't usually let others see the "real" me.

_____ 13. When someone upsets me I will hold it in for a long time, but once in a while I explode.

_____ 14. I will usually go to any lengths to avoid open conflict.

_____ 15. I often have a sense of dread or impending doom.

_____ 16. I often put the needs of others ahead of my own.

Appendix E

Rosenberg Scale (Rosenberg, 1965)

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

1. On the whole, I am satisfied with myself. SA A D SD

2. At times, I think I am no good at all. SA A D SD

3. I feel that I have a number of good qualities. SA A D SD

4. I am able to do things as well as most other people. SA A D SD

5. I feel I do not have much to be proud of. SA A D SD

6. I certainly feel useless at times. SA A D SD

7. I feel that I'm a person of worth, at least on an equal plane with others. SA A D SD

8. I wish I could have more respect for myself. SA A D SD

9. All in all, I am inclined to feel that I am a failure. SA A D SD

10. I take a positive attitude toward myself. SA A D SD

Appendix F

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to fill out a demographic questionnaire, take 2 surveys that ask about my interpersonal relationships and feelings about myself, and perform a categorical timed task. I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researcher's Name and Number:

Rachel Rogers rnr506@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair

Appendix G

Feedback Letter

Thank you for participating in my study. The surveys you took were measures of self-esteem and codependency in relationships. In this study, codependency is defined as a person who offers excessive caring/help for those who may be dependent upon them. Self-esteem was tested in two ways in this project. One measure asked about your conscious self-evaluations (explicit self-esteem) while another measure was looking at your more automatic responses. The timed task, which involved choosing words for a "me" vs. "not me" category, was a measure of implicit self-esteem, or automatic/unconscious evaluations of the self. The demographics survey will be used to determine if there are any cultural or gender differences in responses on the scales that you took. The purpose of this study was to look at the relationships between the two subtypes of self-esteem and codependency. In other words, I wanted to know which subtype of self-esteem was related to a lower level of codependency. My hypothesis was that those participants who scored higher on the timed task (implicit self-esteem) would have scored lower on the codependency scale.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of observers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:
Rachel Rogers

Supervisors:
Dr. Michiko Nohara-LeClair

Urban vs. Rural Work Ethic

Lindsey D. Geeding

The present study was conducted in order to see if there were any differences in work ethic between urban and rural areas in the St. Louis, Metropolitan area. The subjects were recruited from the Lindenwood University faculty and students. The subjects were given a questionnaire created by the researcher, and a survey created by Mirles and Garrett (1997). As the results showed, there were not enough participants gathered to show significance. However, the results did show that students seem to have a stronger work ethic than faculty.

The present study was done to try and understand the work ethic ideals of different demographic regions in the St. Louis Metropolitan area. Based on previous research done, I believe that there is a difference between rural, urban, and suburban populations. The reason behind this idea is in the different types of jobs available to each region as well as the resources available to that region. Rural areas produce a lot more agriculture and small business owners, compared to the big cities. It is in the big cities that we find million dollar corporations and businesses that are franchised.

For example, a person who works for a sales company in the city has a schedule that he or she sets up each week with the clients that they will go see. This requires sitting at a desk and filling out time slots and talking to the clients on the phone. The job may also require that you brush up your knowledge of the items that you are selling, which again, requires sitting at your desk and reading the material provided by the company.

The average rural person, however, might own a farm or ranch which requires the physical knowledge of how to handle big animals, to be in tune with the environment (such as the weather), and an endless number of manual tasks such as stacking the feed for the animals in a shed or barn. The differences between the two environments are immense. Just trying to move from one to another can cause a person to have a small form of culture shock. The amenities that are available to a person in either environment are immensely different.

To help understand how the idea of work ethic was cultivated we must first take a look at the history of the Protestant Work Ethic and the many people who have done work in the field.

The idea of work ethic was first made popular by a German professor by the name of Max Weber. Weber came to America in1905, and noticed the work ethic of the Protestant people. He then put together a thesis that remains popular and debated to this day. Weber believed that the work ethic of Americans had its foundation in the dominant religion of this country, that being the Protestant religions (Weber, as cited in Baehr & Wells, 2002).

One researcher to take note of Weber's thesis was McClelland. McClelland (1961) believed that people had motivation for a reason. There was a reason that a society either did well or not and he thought it depended on what he called the need for achievement factor or N- ach scale. McClelland wanted to test this factor in the individual human being and find out why some people have the drive or motivation to achieve and why some do not.

The first person who wanted an easier way to measure Weber's idea of the Protestant work ethic was Mirels and Garrett. Mirels and Garrett (1971) wanted to create a more efficient way to understand the work ethic of individual people. This caused them to come up with a short, and efficient nineteen question survey that to this day is still used to measure the work ethic of Americans.

A third world country is one that is still in the agricultural state of development and therefore is still in the use of manual labor. A First world country on the other hand is one that has been able to grasp onto the evolution of technology as we know it. This type of country has mostly technologically skilled laborers whose main job is sedentary.

An important international study done by Fernham et al. (2001) showed that the work ethic in Third world countries is stronger than that of a First world country. This mirrors my belief that a rural population in America is going to have a stronger work ethic than that of an urban population.

Another interesting study done by Niles (2001) considered that there might be a difference in work ethic relative to a cultures collectivistic or individualistic stratification. Niles compared the work ethic of Australia to that of Sri Lanka for the fact that Australia is an individualistic country and Sri Lanka is a collectivistic country, which is also not doing well economically. Niles found that the Sri Lankans had just as strong a work ethic as the Australians. However he did discover that the Sri Lankans did not have a strong motivation when it came to the idea of gaining expertise of any activity.

The last international study that I will point out is the research done by Wentworth and Chell (1997). Wentworth and Chell studied a group of college students and found that the international students on campus had a stronger work ethic than that of

the American students. This would also support the findings of the previous studies just mentioned, based on the fact that three percent of the international students were from Korea, and another three percent of the international students were from Taiwan. Neither of these countries has reached First world status. They are in fact considered Second world.

Method

Participants

The participants used for this study came from the faculty and students at Lindenwood University. 120 faculty members where chosen to participate in the study. To save on time with writing down the over 200 faculty member's names and drawing them out of a hat, I just chose the top 120 from the list. As for the students used in the study, 68 were recruited. These students came from three of Dr. Isenhour's classes: Psy 101.11 Interactive Psychology, room Y404, Psy 208.11 Child Psychology, room Y404 and Psy 311.11 Behavior Modification, room Y413. A fourth class was used from Dr. Kelly: Psy 332.11, Psychology of Motivation and Emotion, room Y301.

Materials

Each faculty member was given a packet that included a sheet of paper consisting of the cover letter which described each step the faculty member would use in completion of the packet (see Appendix A). The second sheet of paper in the packet was the researcher's copy of the consent form (see Appendix B. After that was the questionnaire designed to distinguish where each subject currently lived, how long, and whether or not the subject thought of them selves as having been raised rural, urban, suburban or other, and what decade they were born in (see Appendix C). The next section in the packet was

the Mirels and Garrett (1971) survey (see Appendix D). This survey consisted of 19 questions orientated towards finding out the subject's opinions about abstract ideals such as time, leisure, and work. The last section in the packet was the subject's copy of the consent form and a feedback letter with the researcher's contact information (see Appendix E). The students received all the same materials as the faculty members; however, there was no need for the cover letter.

Procedure

The first step of the project was to e-mail each faculty member that had been picked to participate in the study in order to notify them that they had a packet waiting for them in their faculty mailbox. Upon obtaining the packet, the cover letter explained to each participant how to proceed with the procedure. The first step that the faculty member's were asked to do was use only a red pen. Then each faculty member was asked to read and sign the researcher's copy of the consent form. The next step the participants were asked to do was fill out the questionnaire. After completion of the questionnaire they were then asked to fill out the survey. When this was done the participants were asked to keep their copy of the consent form and read the feedback letter attached. This feedback letter had the researcher's information with the note that the participants could contact the research at the end of the study for the results. Upon completion of the packet the participants were then instructed to put the finished packet into my research supervisor's mailbox that had been designated in the cover letter of the packet as the drop of location.

The research for the students was conducted a little differently. I first asked both Dr. Kelly and Dr. Isenhour if it would be okay to use their classes to conduct my

research. Both professors agreed. Upon entering the classroom I announced myself as a senior at Lindenwood University who was conducting research for my senior research project. I then asked the student's if they would like to help me out by filling out one of my questionnaire and surveys. I made a point to say that if anyone did not want to take the survey they most certainly did not have to.

The first item that was passed to the students was a copy of the consent form, questionnaire and survey that had been stapled together. After this, the student's copy of the consent form along with a feedback letter was given to each student. When each student returned the packet back to me I immediately tore off my copy of the consent form so that I would not be able to distinguish who took what survey. After every student had completed the survey, I thanked the class room for helping me and departed.

Results

Of the 120 faculty members that were sent research packets, only 25 were completed and returned. This effected the results of the study. When comparing the urban, suburban, and rural populations I had 21, 63, and 9 results respectively. Upon conducting a One Way ANOVA it was discovered that there was no significance between the three, $F_{(2,90)} = .959$, $p > .05$. The next idea that I wanted to compare was student against faculty. This did come up with a significance $t_{(91)} = .947$, $p < .05$. Upon looking at the post hoc test, which I had to leave out one survey because it was the only from the 1930's, of Tukey it became apparent that there was a significant difference in the results of the participants born in the 40's and 70's versus that of the participants born in the 80's and 90's. The two younger generations performed better on the survey than the

faculty. The last comparison that I wanted to make was to look at the results of the two genders and compare them. This resulted in no significance, $t_{(91)} = .123$, $p > .05$.

Discussion

Due to the fact that I did not have an ideal sample size of 30 for each group being studied, the results of this study are up for debate. There still needs to be a study conducted upon obtaining 30 participants for each group. Even though I did not have the ideal number of participants I still think that I ended up with some interesting results when looking at the faculty versus the students.

The students outperformed the faculty on the survey and there could be a few explanations for this. The first explanation is that the student's might have been viewing the survey from an individualistic perspective. This means that they could have been reading the questions and viewing themselves in the idea at question. This could raise the score of the survey if people are harder on themselves than they are other people. When looking at the faculty, they could have been looking at the survey from a holistic perspective. This could have lowered the score of the survey if people view the world as needing improvement and development. Considering our economy is in a recession, this could very well be the case.

Another aspect of viewing the survey from an individualistic perspective as a student is the fact that student's at this point in their lives are working for themselves. They are working toward a degree in order to have a better future. This leaves little time to think about the outside world or the community around you. The most important focus for a collage student is their school work and grades. However, on the other hand, for faculty it could be different. Faculty members have already obtained their degrees and

have their career well under way. As faculty they now have the time to reflect on the world around them and they come into contact with it through the students in their classroom and the network of fellow professors they have compiled over the years.

This research needs to be conducted again in order to say for sure that there is or is not a difference in work ethic between the three demographic areas. The survey that was used also needs to have an introduction telling the participant's whether or not they should be viewing each question from either a holistic or individualistic perspective. Another aspect of the research that should be taken into consideration is the founding's of each rural community. Some rural community's in America have popped up over the landscape due to good farming ground or because a factory has decided to be built there and people come for the jobs. These factors could change the way a person views life in general.

References

Baehr, P. & Wells, G. C., (2002). *The pro*te*stant ethic and the "spirit" of capitalism.* New York, NY: Penguin Group.

Bellah, R. N. (1957). *Tokugawa religion: The values of pre-industrial Japan.* Glencoe, IL: The Falcon's Wing Press.

Furnham, A. (1987). Predicting protestant work ethic. *European Journal of Personality, 1(*2), 93-106.

McClelland, D. C. (1961). *The achieving society*. St. Princeton, NJ: D. Van Nostrand Compay, Inc.

Mirels, H. L., & Garrett, J. B. (1971). The protestant ethic s a personality variable. *Journal of Consulting and Clinical Psychology*, *36*(1), 40-44.

Wentworth, Diane K., & Chell, Robert, M. (1997). American college students and the protestant work ethic. *Journal of Social Psychology*, *137*(3), 284-296.

Appendix A

Lindsey D. Geeding
Lindenwood University
November 4, 2008

Lindenwood Faculty
209 S. Kingshighway
St. Charles, MO 63301

Attn: Professor Faculty

Hello, my name is Lindsey Geeding, and I am a senior here at Lindenwood University. For my senior research project I am studying the work ethic of urban, rural, and suburban populations. I have chosen the faculty members for my study here because you all have the same type of profession, which will be a good control for my study.

I would greatly appreciate your help in collecting the data for this research project. In this packet I have enclosed two consent forms, questionnaire, survey, and feedback letter. If you would be so kind as to fill out the first consent form, questionnaire and survey with a **red pen**, and then deposit them back into Dr. Nohara-LeClair's mail box, she has agreed to deliver the results to me anonymously. The second copy of the consent form and the feedback letter are yours to keep for your records. I need to have the results back by Monday November 11th.

If you have any questions about this project please feel free to contact me at my lionmail account, ldg096@lionmail.lindenwood.edu. You may also call my professor in charge of my research Dr. Nohara-LeClair at x4371. Thank you so much for your time and valued opinion.

Sincerely,

Lindsey D. Geeding

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short survey and questionnaire about work ethic and motivation. I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Name and Number:
Lindsey D. Geeding
ldg096@lionmail.lindenwod.edu

Supervisor:
Dr. Michiko Nohara-LeClair
Course Instructor
(636)-949-4371
mnohara-leclair@lindenwood.edu

Appendix C

Appendix C

Questionnaire

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

1.) Are you MALE FEMALE?

2.) Would you consider yourself to have been raised…?

URBAN SUBURBAN RURAL OTHER

3.) What decade were you born in?

1930-1939 1940-1949 1950-1959 1960-1969

1970-1979 1980-1989 1990-1999

4.) Please write down where you have lived for the last five years… (Not including Lindenwood).

City/Town _____ City/Town_____

State _____ State _____

Zip Code _____ Zip Code _____

How Long (In years)_____ How Long (In years)_____

City/Town _____ City/Town _____

State _____ State _____

Zip Code _____ Zip Code _____

How Long (In years)_____ How Long (In years)_____

Appendix D

Survey

Please circle the number that corresponds to the word you agree with.

1.) Most people spend too much time in unprofitable amusements

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

2.) Our society would have fewer problems if people had less leisure time.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

3.) Money acquired easily (e.g., through gambling or speculation) is usually spent unwisely.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

4.) There are few satisfactions equal to the realization that one has done his best at a job.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

5.) The most difficult college courses usually turn out to be the most rewarding.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

6.) Most people who don't succeed in life are just plain lazy.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

7.) The self-made person is likely to be more ethical than the person born to wealth.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

8.) I often feel I would be more successful if I sacrificed certain pleasures.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

9.) People should have more leisure time to spend in relaxation.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

10.) Any one who is able and willing to work hard has a good chance of succeeding

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

11.) People who fail at a job have usually not tried hard enough.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

12.) Life would have very little meaning if we never had to suffer.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

13.) Hard work offers little guarantee of success.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

14.) The credit card is a ticket to careless spending.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

15.) Life would be more meaningful if we had more leisure time.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

16.) The person who can approach an unpleasant task with enthusiasm is the person who gets ahead.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

17.) If people work hard enough they are likely to make a good life for themselves.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

18.) I feel uneasy when there is little work for me to do.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

19.) A distaste for hard work usually reflects a weakness of character.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

Appendix E

Feedback Letter

Thank you for participating in my study. This study was conducted to see if there are any differences in urban, suburban, and rural work ethic. The questionnaire was used in order to determine if there were also any differences in work ethic involving the decade you were born in and how you perceive yourself to have been raised.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group, of which you are now a part of. No identifying information about you will be associated with any of the findings; therefore I will not be able to give you the results of your specific participation.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,
Principal Investigator:
Lindsey D. Geeding ldg096@lionmail.lindenwood.edu
Supervisor:
Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Author Note

I would like to thank Dr. Nohara-LeClair for all her help in completing this research project. I would also like to thank Dr. Kelly and Dr. Isenhour for the use of their classrooms for my research. In addition, I would like to thank Dr. Scupin for his advice and help in conducting this research.

If you have any questions for concerns regarding this research report please contact me by e-mail at ldg096@lionmail.lindenwood.edu or lindg83@yahoo.com.

The Legacies of Lindenwood:

A Survey of What Female Graduates did After College

Elizabeth Dalton

This project looked at the women who graduated from Lindenwood College in the years 1955, 1965, 1975, and 1985 to see whether or not they used their degrees outside of the home. The hypothesis that more women would use their degrees outside of the home as a result of social changes as the decades increased was not supported as the trend began to decrease with the 1975 class.

Over the years, the social climate of the times has had a great impact over women's career seeking behavior, thus, some privileged women began obtaining degrees in higher education. Lindenwood University, a school that began as a place designed specifically for women to gain higher education was founded in 1857 by George and Mary Sibley. Their purpose was to offer an education to women that rivaled other institutions. Families from all over the country would make an effort to send their young daughter to Lindenwood College with the hopes that she would be educated and would marry a prestigious man (Jones, 1970). Later in the mid 1900s, while the average woman's goal was still, above all, to marry, various social changes occurred throughout the United States, presenting women with the ideology to pursue a career after graduating college as well as maintain a family (Jones, 1970). This study is one that revolves around history and women's reactions to the changes around them. Thus, the root of the project is embedded in historical summation of what occurred that would propel women to obtain and use their degree outside the home or any instances that occurred that would have discouraged women from using their education outside of the home.

In 1950's America, the typical woman was welcoming back her husband or potential husband from the Second World War (Kossoudji & Dresser, 1992). She had most likely worked some type of job as a response to "Rosie the Riveter," a fictitious woman created by the United States government who encouraged other women to take on the jobs that the men left behind to better propel American troops into a victorious war. "Rosie the Riveter," also encouraged women to give up the jobs to the returning men and return to their traditional lives of maintaining their house for their family. Most women had no problem returning to their role as a housewife as it was widely publicized as a desired ideal. "The suburban housewife was the dream image of the young American woman…she was healthy, beautiful, educated, concerned only about her husband, her children, her home. She had found feminine fulfillment," (Friedan, 1963, p42). A woman's education dictated her marriage partner, thus, much importance was placed for a woman from the upper-middle classes to obtain a very good education to fulfill their goal of the American housewife. This emphasis placed on female domesticity gives reason as to why some women did not use their degrees outside of the home in the 1950s, and also why women's enrollment dropped from forty to thirty-one percent in 1950 (Woloch, 1996).

Throughout the 1960s, the number of women enrolled in higher education in America doubled (Woloch, 1996). Women began studying the same subjects as men as opposed to the prior feminine curriculum. Those women who attended college also became active in the various social movements in the 1960s such as the Civil Rights Movement (Freeman, 1973). Throughout the movement, women worked along-side men to gain equality between blacks and whites. As a result, women began quietly advocating for gender equality as they saw parallels between the blacks and whites compared to women and men. The growing rise of enlightenment, spawned from the college campuses of the 1960s, gave heed to women's

involvement in the workforce and the demand for more equality (Freeman, 1973). Although the reaction to the Civil Rights Movement was very relevant to women craving recognition outside of the home, the typical college woman seemed to not be able to see past her marriage (Woloch, 1996). There was also a fear held by some women that any type of achievement would deter possible marriage partners (Woloch, 1996). This might explain why there was a dramatic increase in women attending college, as well as an increase in women using their degrees outside of their home but also why the increase in women using their degree was less than those obtaining them.

The year 1970 marked extreme development in women obtaining college degrees and then using them to find work outside of the home. A simple invention of the pill is cause for such change (Goldin & Katz, 2002). Although the pill was initially released in the 1960s, it did not gain popularity among the majority of women until the late 1960s as a result of legal issues; single women were not legally prescribed the pill until this time. The availability of the pill made it possible for women to choose when they wanted to have children or if they wanted them at all. This made the possibility of obtaining work very easy as the question of pregnancy was now off the table and women became viewed even more as equals to men (Goldin & Katz, 2002). Women could now pursue graduate degrees and careers. Women also began to want to have careers as much as a marital life and throughout the 1970s, men began to find it attractive that women had careers thus further propelling women to pursue careers outside of the home (Goldin & Katz, 2002).

Throughout the 1970s, the feminist movement began to gain steam, as well as other movements like the homosexual movement as well as the Black Panther movement. The growing amount of drugs, violence, and sex attributed to these movements caused the majority of

Americans to view them as too radical and not at all effective (Buhle, Murphy, & Gerhard, 2008). Thus, when conservative women such as Phyllis Schlafly began to encourage Congress and her fellow Americans to stop the passage of the Equal Right Movement (ERA), and succeeded, the feminist movement tumbled to shambles (Buhle, Murphy, & Gerhard, 2009). Throughout the 1980s, Republican presidents such as Reagan began advocating the importance of the family; women began feeling the pangs of guilt of not being with their families and took it upon themselves to maintain a kept home (Buhle, Murphy, & Gerhard, 2009). Even though feminist ideology was buried, women still were expected to obtain an education as well as continue to work outside of the home, giving heed to the social pressure of balancing two circulating ideals of what constituted a woman. From women only expecting to clean and keep the home, to the idea of women working only in the workforce to a combination of the two left women grasping onto their socially defined ideals of what was expected of a woman; thus women were still graduating from college and pursuing careers in the 1980s (Buhle, Murphy, & Gerhard, 2009).

The purpose of the present study was to compare the paths the women who graduated from Lindenwood College took from the 1950s to the 1980s. The study was done to show that the career choices of women who graduated Lindenwood College in the 1950s throughout the 1980s mirrors society's as a whole reaction to events such as the women's liberation movement, the advent of the birth control pill, as well as other instances in women's history. The hypothesis of this study predicted that women who pursued higher education in the mid-1900s then used their degrees outside of the home, would pave the way for those to do the same in later decades by contributing to the women's liberation movement. This would propel more social acceptance

of women working outside of the home. Gradually, in later decades, more women would use their college degrees outside of their home.

Lindenwood College education was initially intended for women only. Lindenwood Archives provide a wealth of information about women who attended the college, socially as well as academically. Lindenwood and its graduates can benefit by relating women's education and progress through various time periods in American history. This shows that the school played a pivotal role in the changing of women's education and career choices. The researcher reviewed books and journals with information regarding this subject to provide explanations to explain the data gathered from Lindenwood University. The researcher then gathered the data from the Lindenwood Archives from the graduating classes of 1955, 1965, 1975, and 1985 and then researched the women in the University's alumni records to see what the graduates did after college. The experimenter then analyzed the particular reasons why there was either more or less women using their degrees in each particular decade by using the information gathered in various scholarly books or journals.

Method

Data

The experimenter used data that Lindenwood University Alumni Services had previously collected from the graduating classes of 1955, 1965, 1975, and 1985 to conduct an archival study. Because this information is available to the public, no informed consent was used. Lindenwood College catered to the education of women, thus only the data of the women who graduated Lindenwood in these classes was used. All of the women who gave information to Lindenwood College, that graduated in said years of study, after graduation were used in the study.

The experimenter used the yearbooks of the seniors that graduated in 1955, 1965, 1975, and 1985 to gain information of those ladies who graduated those said years located in the Lindenwood University Archives. The yearbooks gave the name and major of each senior who graduated each particular year. The experimenter also used the "Lindenwood College Alumnae Directory," published in 1969, the "Lindenwood College Alumni Directory," published in 1990 and the "Lindenwood College Alumni Directory," published in 1997 which contained information on marital status and career paths, including graduate studies of all those women who contributed said data after graduation. The experimenter used pencils to record the information on paper and then used a computer to enter the collected data into SPSS, the Statistical Package for the Social Sciences to further analyze the data. The study was an archival study, thus there are no independent and dependent variables. All the information was retrieved from data that was previously collected by Lindenwood University's Alumni Services and used to find out how many women who graduated from Lindenwood College used their degree outside of the home. To further understand the results, the researcher compared them to the climate of the times by using various books notated in the references section of the paper.

Procedure

The researcher first used yearbooks of the graduating classes as a whole, separating the classes of 1955, 1965, 1975, and 1985. The researcher recorded how many graduates encompassed each particular class and their majors. Then, the experimenter used the "Lindenwood College Alumnae Directory" published in 1969, to attempt to follow up on the graduates of 1955 and recorded their marital status. After, the researcher followed the graduates in all the classes of 1955, 1965, 1975 and 1985 by looking at the two volumes of the "Lindenwood College Alumni Directory," one published in 1990 and the other in 1997. The

researcher recorded information pertaining to the women's marital status, her career and any graduate education. The experimenter then entered data into SPSS to generate percentages of how many women used their degree outside of the home within each class.

Results

Descriptive statistics were used and showed that 45.5% of the women who graduated in the class of 1955 used their degree outside of the home whereas 6.8% of those worked as "homemakers" inside of the home. The other 47.7% of the class's occupation could not be followed up on. In 1965, 55.4% of the women graduates used their degree outside of the home and 2.7% did not, 41.9% of the graduates' data sighting occupation could not be found. In 1975, 40.5% of the women graduates used their degree outside of the home whereas 4.8% did not and 54.8% of the women in that class's data could not be found regarding occupation. In 1985, 33.3% of women who graduated from Lindenwood College used their degree in an occupation outside of the home, 3.7% worked inside the home, and 63% of those graduates' data concerning occupation could not be obtained (see Figure 2).

Throughout the four individual years that were researched, the most common majors were within the humanities division and the education division (see Figure 1). Those who graduated within these four years most commonly married (see Figure 3). Using Chi Square analysis, the researcher found that in the 1955 class, four women attended graduate school upon graduating from Lindenwood College. Two were married, constituting 5.3% of those of the class who had married and two were single, 66.7% of those who stated that they were single. In the 1965 class, 11, or 25.6% of those who were married attended graduate school and two, or 25% of those who stated they were single attended graduate school. In the 1975 class, 10, or 29.4% of those who married attended graduate school and 4, or 36.4% of those who said they

were single attended graduate school. In the 1985 class, 1 woman who was married, or 12.5% of those who married attended graduate school, yet no one else attended graduate school.

Discussion

The results showed that there was an increase in women who graduated from Lindenwood College who used their degree outside of the home in the class of 1965 as opposed to 1955 but the numbers were reduced in the 1975 as well as the 1985 class. Thus, the researcher's hypothesis of the number of women who used their degree outside of the home would increase throughout the classes of 1955, 1965, 1975, and 1985 was not supported with this research. This could be explained by lack of provided knowledge of the graduates of the last two years. Also, this could be explained by the decline of women in the classes of 1975 and 1985 because of Lindenwood College's lack of enrollment. Fewer women attended the college at the time, thus the effects of events such as the women's liberation movement that was referred to earlier with much importance, could not be seen within the minimal graduates of the college.

Lindenwood has always been a private institution thus normally; the college most likely did not lower its tuition to increase its attendance until their financial standing in the 1970s and 1980s. Thus, in the 1950s and 1960s, women of higher status might have attended the college to obtain a well rounded education and marry. Yet, because of their status, women could work if they wanted or continue their education and go to graduate school. Whereas those women, especially those in the 1985 class could not obtain graduate education perhaps because of their wealth but also because of the college's negative standing in the academic community. This could explain the higher numbers of those with occupations and went to graduate school in the 1955 and 1965 classes as opposed to the 1975 and 1985 classes. The financial standing of the

college could have had a substantial affect upon the women who attended at each specific time and could have been an extraneous variable that affected the results of the study.

The majority of women who attended the college in the years 1955, 1965, 1975, and 1985 graduated with majors in the divisions of education as well as humanities (see Figure 2). Perhaps those graduates who majored in areas within these two divisions engaged their occupation as a teacher either within or outside the home to further propel her family. Thus, it might also be inferred that the majority of graduates from these said years felt an occupation as a teacher was the most rewarding.

Some problems that effected research were the inconsistency of the archival documents used. As stated previously, the researcher first gathered the names and majors of the graduates in each individual class by the use of the yearbooks in the Lindenwood University's Archives. The 1975 yearbook did not provide the names of those who graduated or their major. Thus, the researcher then referred to the Alumni Directory to view those names of those who graduated in 1975. As a result, various majors of those graduates were not stated and even less information were provided concerning the graduates' marital status as well as their occupation. Another inconsistency that further profited any confidence in gathered information was the Alumni Directories as a whole. In the 1985 yearbook, one graduate was listed in the Alumni Directory as a graduate of the 1984 class. Thus, the researcher then used the concrete tool of research, the yearbook as it was a primary source of the time and was left pondering what other small inconsistencies were within the various secondary sources provided by the alumni services.

Although the results provided did not support the proposed hypothesis that more women would use their degrees outside of the home, there might reason as to why it did not. Throughout the 1955 and 1965 classes, more women stated that they had married than they did their

occupation (see Figure 1 and Figure 3). These women felt the necessity to report that they had indeed married but could not also report as to whether or not they had an occupation. Thus, it can be inferred that these women who did not list their occupation did not do so because they did not have one. One might infer that these women did not report their occupation because they did not want to waste their time but the question that arises is that many of these women, especially in the classes of 1955 and 1965 did report their marital status so one does wonder why they did not just state an occupation as well. Of course there is no data to back this inference. One might obtain the answers to this mystery by sending out a survey to those who graduated from Lindenwood College or actually conduct interviews of these former graduates.

Some occupations listed by women in the 1955 and 1965 class consisted of being a church organist and other various light-hearted occupations that one might assume were hobbies as opposed to actual careers. Of course, one cannot label any occupation as more significant than any other but questions arise of what women considered a profession and whether or not that differed throughout these four decades. Perhaps further research can be conducted into what was considered an occupation by women throughout the mid to late 1900s and how that affected their pursuit of a career.

If one were to recreate this study, one might want to research data from more than one class from each decade to better gain a representative sample of those Lindenwood graduates from the decades of the 1950s, 1960s, 1970s, 1980s, and perhaps include the 1940s as well. Perhaps surveys or actual interviews asking these graduates to explain their actions after college could be used for further detailed research. Some questions that might be included in these surveys and interviews would consist of, whether or not they had worked at all and if so, was it right after college or later in their life, whether they were married and had a family and if so,

whether or not they stayed home to care for them or continued working. Also, one might want to ask their salary made from their occupation and whether or not it was used to support the family or as excess funds for the family.

The results and discussion of this study can be regarded as a contribution to Lindenwood University's history. They can show how this small school reacted with social changes that affected the entire country. Women in the 1950s and 1960s did obtain careers and attended graduate school and could be assumed to pave the way for the advent of the women's liberation movement. Unfortunately, because of Lindenwood's past, it is difficult to analyze such a relation. This data provides a wealth of information, and some more organization, for anyone interested in the women who graduated from Lindenwood as well as the college's archives.

References

Buhle, M.J., Murphy T., & Gerhard, J. (2009). *Women and the making of America*. New Jersey: Pearson Prentice Hall.

Freeman, J. (1973). The origins of the women's liberation movement. *The American Journal of Sociology, 78,* 792-811.

Goldin, C., & Katz, L. F. (2002). The power of the pill: Oral contraceptives and women's career and marriage decision. *The Journal of Political Economy, 110,* 730-770.

Kossoudji, S. A., & Dresser L.J. (1992). Working class Rosies: Women industrial workers during World War II. *The Journal of Economic History, 52,* 431-446.

Woloch, N. (1996). *Women and the American experience: A concise history*. New York: The McGraw Hill Companies, Inc.

Figure Captions

Figure 1: How many women used their degrees outside their home compared to those who were homemakers or did not list an occupation who graduated in the years 1955, 1965, 1975, and 1985.

Figure 2: How many claimed majors within the divisions of Lindenwood College of those graduates who followed up with Alumni Associations for the years 1955, 1965, 1975, and 1985.

Figure 3: Women who reported their marital status as opposed to those who did not from the years 1955, 1965, 1975, and 1985.

Figure 1: Occupations After Graduating for the Years 1955, 1965, 1975, 1985

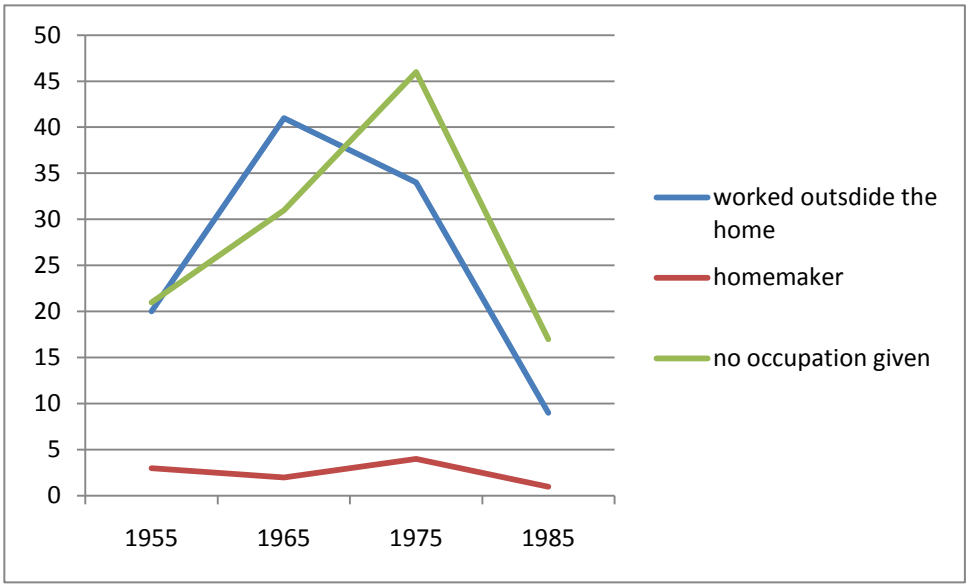


Figure 2: Divisions Studied by the Graduates of 1955, 1965, 1975, 1985

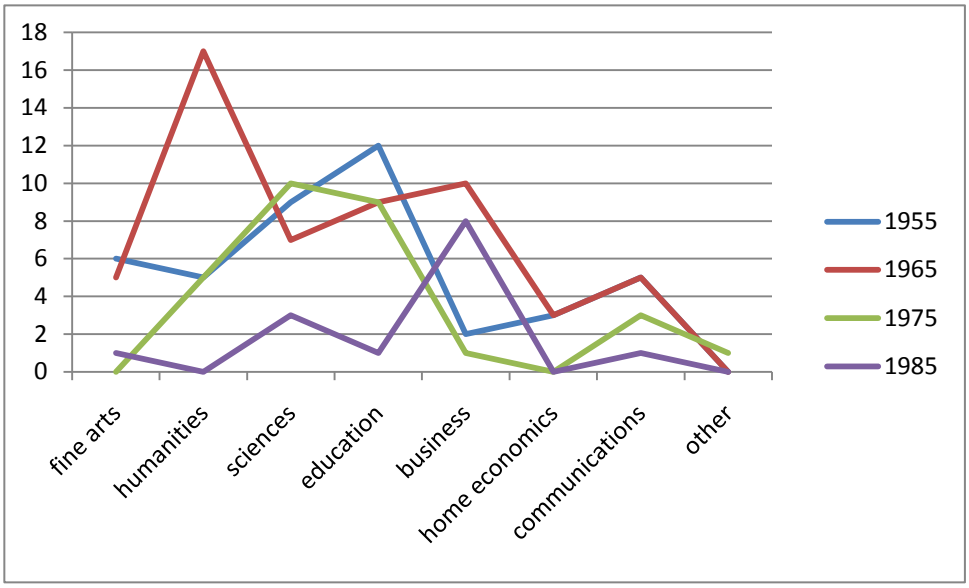
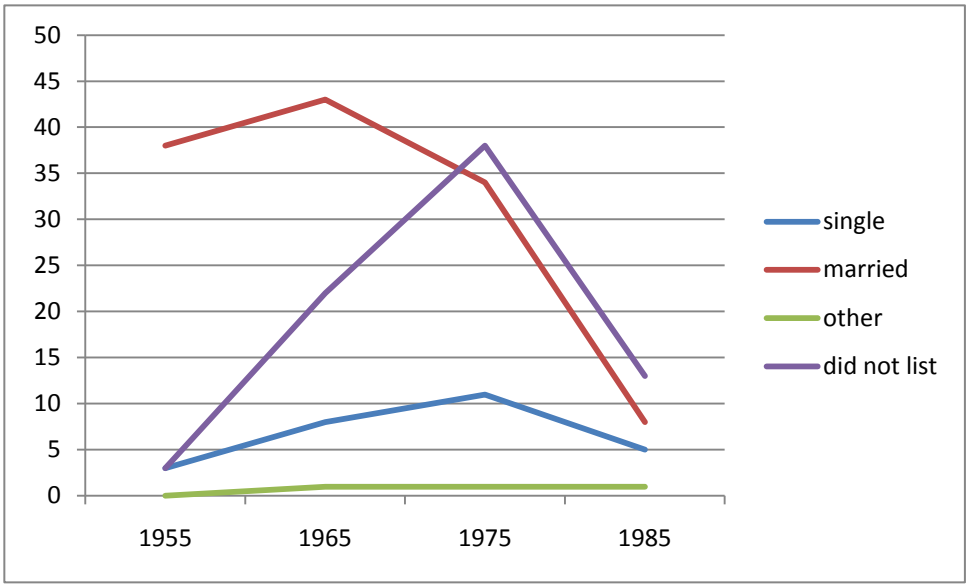


Figure 3 Marital Status of the Graduates of 1955, 1965, 1975, 1985



Author Note

Special thanks to Paul Huffman who provided a wealth of information by opening up the archives for research and pointing me numerous times in the correct direction. He and his archives provided yearbooks and alumni data that enabled me to conduct my research as smoothly and efficiently as possible.